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ATHLETIC JOURNAL

January 1961



A Special Report to Athletic Directors, Coaches and Trainers . . .

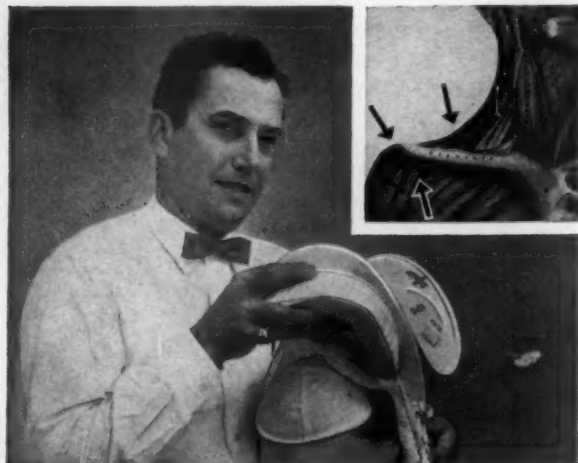
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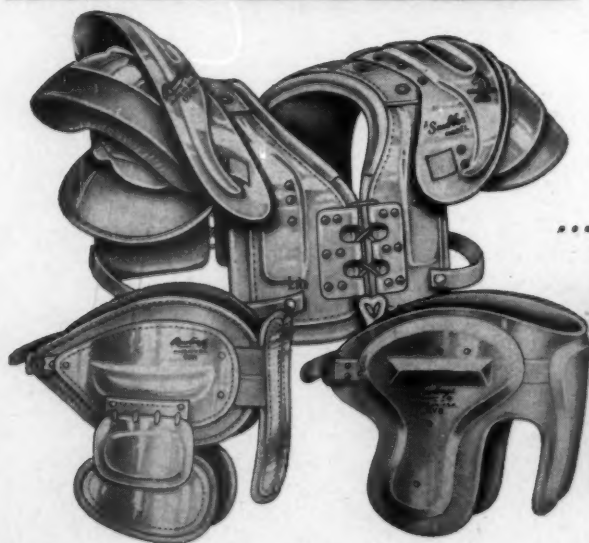
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throwing of racquets does not help American prestige. It has been said, "nothing is as important as winning," but we wonder whether in international competition, the ability of our athletes and coaches to act as salesmen for America is not equally important. Let us continue to send our athletes overseas, but let us make sure they are as proficient in sportsmanship as in athletic skills. It was not difficult for our athletes to be good sports when they were winning international athletic contests easily, but now with the other countries catching up in athletic ability we are under very close scrutiny.

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EVER hear of a football game in which 222 points were scored yet neither team registered a first down? It actually happened when Georgia Tech defeated Cumberland 222-0. Every time the Georgia Tech players managed to get the ball they scored. One of the stories coming out of the debacle relates how a Cumberland halfback fumbled, and as the ball rolled toward another Cumberland back, one of the Cumberland ends shouted: "Fall on it, Pete." Pete replied: "Fall on it yourself — I didn't fumble it" . . . According to a recently completed study at Michigan State, there is absolutely no truth in the old belief that milk, ice cream, and cheese will lessen endurance in athletes. It will be interesting to find out whether there is truth in the contention that milk causes excessive dryness in the mouths of athletes . . . Jay Colville, Miami (Ohio) University's trainer for almost 40 years, walked into the Miami dressing room a number of years ago, after the team had suffered a humiliating defeat by Cincinnati which concluded a winless season, with these words: "Cheer up, men, you can't win 'em all." . . . Along the same lines, one of the Indiana students walked up to Phil Dickens on the campus and said: "Cheer up — you played .500 ball — beat Marquette, lost to

Oregon State, and the Big Ten games don't count." Then there is the old classic about the coach whose team fumbled away two touchdown drives, had two passes intercepted for touchdowns, and his star halfback out with a possible broken ankle. Out of the gloom a little voice said: "Cheer up, things could be worse." So the coach cheered up and sure enough things got worse.

★ ★ ★

THE newest all-time list compiled for the British magazine, "World Sport," by Roberto Quercetani shows but seven performances made prior to 1950. These were J. Carlton of Australia 20.5 in the 200 meters around a turn in 1932; R. Harbig (Germany) 1:46.6 in the 800 (1939); Harrison Dillard 13.6 for the 120 highs (1948); Warmerdam 15-7/8 for the pole (1942); and three in the broad jump — Owens 26-8 1/4 (1935); Steel 26-6 (1947); and Peacock 26-3 (1935). As a matter of fact, 104 of the 217 names on the list were due to performances made during the year just passed. There were 20 events considered including the mile, the 1600 meters, the steeplechase, hop step and jump, and decathlon . . . A survey conducted by the Ohio High School Athletic Asso-

(Concluded on page 28)



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COACHES' CLINIC

Question:

With runners on first and second, no one out, the score close and with a forced play at third in order is it best to have the shortstop hold the runner at second close, then break for his position on the pitch, or take his normal double play position and break in to drive the runner back just before the pitch?

W. P. FEHRING, Stanford University



We believe the best method is as follows: The shortstop takes a position on the pitcher's side of second base with his right heel touching the corner of the base nearest the pitcher. His glove is held in front of his right knee as a target. If the pitcher throws to the shortstop, the shortstop drops his right foot behind second base as the ball is in flight, catches it, and makes the tag. If the pitcher throws to the plate, the shortstop breaks toward third base, in front of the runner in order to protect the area between the third baseman and second base. In our opinion, this method is easier to teach, requires less time for practice, and minimizes the chance for error when the ball is pitched. The runner is not affected by the shortstop's action, and the shortstop's vision is not impaired by a runner in front of him.

MARTY KAROW, Ohio State University



We favor the method in which the shortstop fakes the runner back toward second base just before the pitch. As the pitch is made, the first baseman comes in on the grass and covers the first base side of the diamond. The pitcher throws to the plate as the shortstop fakes the runner back and immediately covers the third base side of the diamond. Our third baseman plays four strides in on the grass, and as the ball is bunted, if he feels the pitcher can handle the bunt, he covers third base for the force play. However, if the bunt cannot be handled by the pitcher, then the third baseman fields and makes the play at first base. If the runner is not faked back on the play, our pick-off play is used, hoping it will force him to go back to the bag on the shortstop's fake.

EARL E. LORDEN, University of Massachusetts

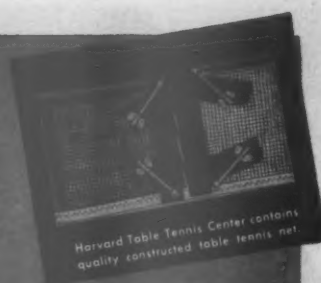


Under the circumstances a bunt may be expected. Our team practices three defenses to get a better chance for a force at third. All moves are made after the pitch and as the runner drives back toward second base. 1. The shortstop drives hard for the base. However, he can recover in time to cover the territory. 2. Our center fielder locates 10 to 12 yards behind second base and then drives hard for the base. The shortstop cheats toward third and covers the base leaving the third baseman, pitcher, and the first baseman to play the bunt. 3. The shortstop drives hard for second and continues over the base into the diamond to cover the pitcher's territory. The pitcher has moved to cover the third baseline. In these defenses the pitcher should keep the ball in the strike zone low on the third base side.

TOM. K. SWAYZE, University of Mississippi



When the defense is not positive that the bunt is in order, a pitch-out must be executed. The shortstop should break to the bag following the pitch for a pick-off throw from the catcher. On the pitch-out, if the batter indicates that he intends to bunt, then, on subsequent pitches, the shortstop will break at top speed to the bag when the pitcher comes to his pause during the stretch. If the runner breaks back to second base, the pitcher throws to the hitter, thus enhancing the chances of forcing the runner at third base on the bunt. If the bunt is not indicated or in order, then the shortstop assumes his normal double play position.



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The Track of the Future

By DR. DON CASH SEATON
Track Coach, University of Kentucky

WE have completed construction of what might well be the finest track in the world and the track of the future. It has a rubber-asphalt surface that is soft, tough, and springy. The one-inch surface (similar to the rubber-asphalt mixture developed by coaches Bill Bowerman at Oregon and Peyton Jordan at Stanford) was laid over a regular asphalt pavement the same as that required for highway paving in Kentucky. It is a 32 foot track with 4 foot lanes marked with highway-type lines that is ready in all types of weather and never has to be *manicured* as do the old-fashioned porous tracks.

The Track. The 440 yard track has a 10 foot radius, a 170 yard straightaway for the 120-yard high hurdles (Illustration 1), and is planned so that all races finish at one line. The curbs are of concrete 4 inches wide, painted yellow, and are flush with the track. All starts, staggers, passing zones, and hurdle markers are painted on the track in different colors and are available for training as well as for meets. Starting block holes, with copper sleeves, are sunk at all necessary starts so that the blocks can be dropped in easily and removed. No hammering is necessary.

Hard on the Feet and Legs? Everyone asks, *Isn't it hard on the feet and the legs?* The answer is definitely, *No*. After a season of training and running a number of meets, it is obvious that no unusual soreness developed among the runners. In fact, many of our men like to run, and even hurdle, barefoot, on the track. Last summer Robert Fell, a distance runner from Indiana University, won a two mile race in one of our Olympic development meets in 9:30.7 running barefoot. When asked how he liked it, following the race, he exclaimed: *Boy it's great. I wish we had a track like it.* No one has experienced burned or blistered feet because of the heat.

We have space for training and warm-ups on a grass track, but no one uses it.

The Holes Close Up. Although the track will obviously take $\frac{3}{8}$ " or $\frac{5}{8}$ " spikes, we find it desirable to use the $\frac{1}{4}$ " or $\frac{1}{8}$ " spikes. These give sufficient grip and are easier to handle. A few seconds after the spikes come out of the track, the holes close up and disappear. Rubber sole shoes hold well and a number of distance runners prefer to use them.

We held our state high school meet on the track and the requisite of short spikes did not cause any hardship. Most schools buy shoes with removable spikes. Others filed down their old permanent spikes and some merely removed the spikes from the shoes.

Is the Track Fast? It is bound to be one of the fastest tracks in the world. The firmness of footing with its resiliency should make it as fast as a track can possibly be. Regardless of the weather, the footing will remain the same, except that it is a little harder in cold weather and softer in hot weather. We expect some of the best times to be made by middle distance and distance runners during a refreshing rain in mild weather.

Many of our state high school records were broken and a few university records during the first season, and we look for many more to fall in the future. There is one certainty; we will never have to conduct a meet in two or three inches of muddy cinders and water.

The Infield. We are fortunate in that the infield is used only for track and have arranged the field events on the bleacher side so they can be seen easily.

(Continued on page 59)

Illustration 1. A view of the 120-yard high hurdle straightaway. The block holes are sunk in the track with copper sleeves enabling the blocks to be set in and removed easily. **Illustration 2.** The 20' x 20' pole vault pit which can be approached from two directions. One run-

way is 140' and the other 150'. **Illustration 3.** The combination shot and discus platform for competition. The shot is thrown toward the concrete stop wall and the discus in the opposite direction.



Developing Pole Vaulters

By **BILL PERRIN**

Track Coach, Alton, Illinois, Senior High School

COACHES often make the mistake of trying to develop vaulters during three or four months of the regular track season. Pole vaulters should be training the year around in various formal and informal activities which are conducive to developing strength, reactions, coordination, and air-mindedness. Many of the activities will overlap, but one activity usually requires more of one ability than the other.

The table below shows some of the activities which are helpful in developing vaulters.

In many areas of our country it is impossible to work on track events the year around due to inclement weather or lack of indoor facilities. Therefore, coaches must resort to various related exercises and drills in order to develop their athletes toward top performances. We shall present some of the indoor and outdoor drills and exercises that will be helpful in developing high school vaulters.

Tape some sponge rubber on the end of a vaulting pole and have the vaulters practice underhand pole plants against a wall (Series A). Emphasis should be placed on getting the pole and hands out in front of the chest and coming under the pole in a good take-off position. The pole plant should be controlled and not slammed into the box or against the wall.

Practice pole vaulting, rolling back with the head and shoulders, working on an explosive pull, and shooting the legs up the rope in a vaulting action (Series B).

At least 30 chin-ups should be done every other day, with emphasis on speed, especially during pre-season. They can be done in sets of six with five repetitions to a set. As the vaulter's strength improves, weights can be added.

The vaulter should also work on the chin-up into the front supporting position (Series C). This exercise is par-



Series A

ticularly good as it develops the continuous pull and finish action in vaulting.

Execution — The vaulter hangs from the high bar with his arms extended and his knuckles up. Then he pulls up as though he were doing a chin-up. He continues pulling until his arms are extended and he is in a front supporting position.

Series D shows the pull-over on the high bar. This exercise teaches vaulters to roll back and pull their hips above the hand hold.

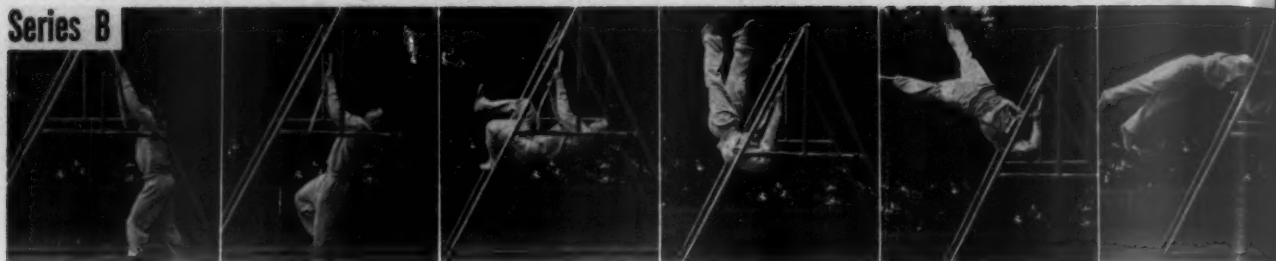
Execution — The vaulter hangs from the bar with his arms extended.

Helpful Activities for Vaulters

Strength and Power	Reactions	Coordination	Air-Mindedness
Weight training	Wrestling	Tumbling stunts	Rebound tumbling
Rope climbing	Tennis	Swimming	High bar stunts
Weight events in track	Handball	Walking on hands	Diving
	Sprinting events in track		Jumping events in track
	Boxing		



Series B



Then he rolls his head and shoulders back and pulls his legs and hips up and over the high bar. He holds on to the bar and keeps his hands near his hips. Then he rotates his body into a front supporting position.

Vaulters should be able to do five to ten repetitions of handstand push-ups against a wall (Series E).

Execution — The vaulter should place his hands about one to two feet from the wall and throw his feet up against the wall into a handstand. He should let his body down until his forehead touches the floor. Then he should extend his arms and raise his body up into the starting position.

Bill Perrin graduated from Missouri Valley College in 1956 where he still holds the school pole vault record. While serving in Japan in 1957 he was track coach at Yokohama, and then in 1958, while working for his master's degree at Kirksville, Mo., State Teachers College, he served as assistant coach in charge of field events. After two years in the Alton school system, Perrin was named head track coach at the high school. Last season he guided his team to second place in the state track meet.

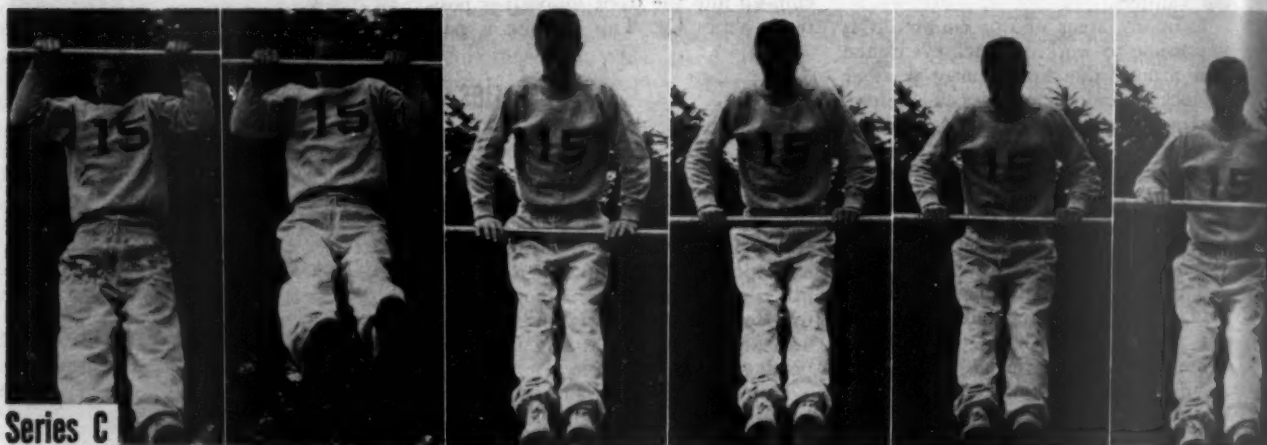
Rebound tumbling stunts are particularly helpful in developing a sense of air-mindedness. The somersault, cradle (Series F), and baranai are stunts which we use.

Also beneficial in developing coordination is the exercise shown in Series G. This is the standard hand walking exercise in which the hand is brought up to touch the chest.

Another excellent indoor drill is to have the vaulter practice the floor vault so that he will become accustomed to the position of his body in relation to the pole (Series H). This drill should be walked through several times before the jump and kick are used.

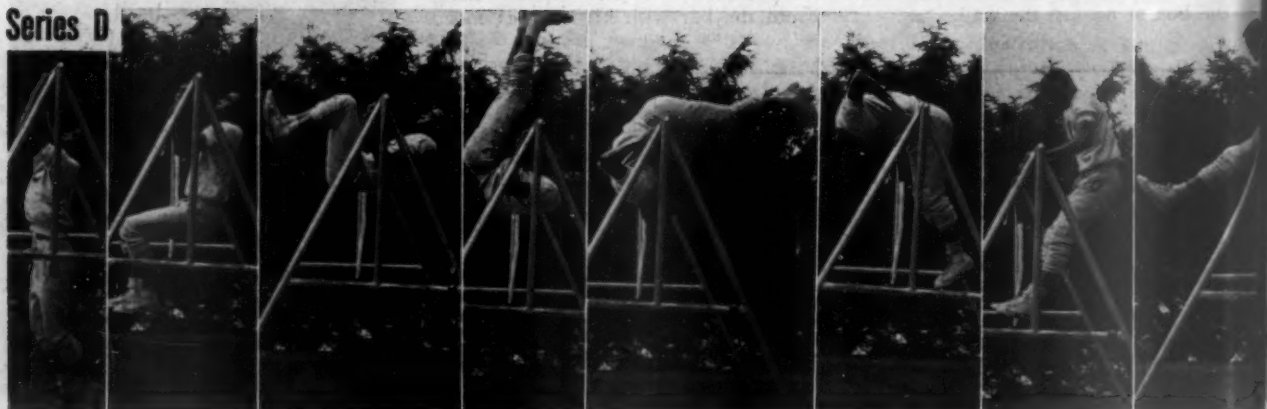
Execution — The vaulter's arms should be slightly flexed and the pole placed near his left hip. Moving forward, he should pull with his arms

(Continued on page 44)

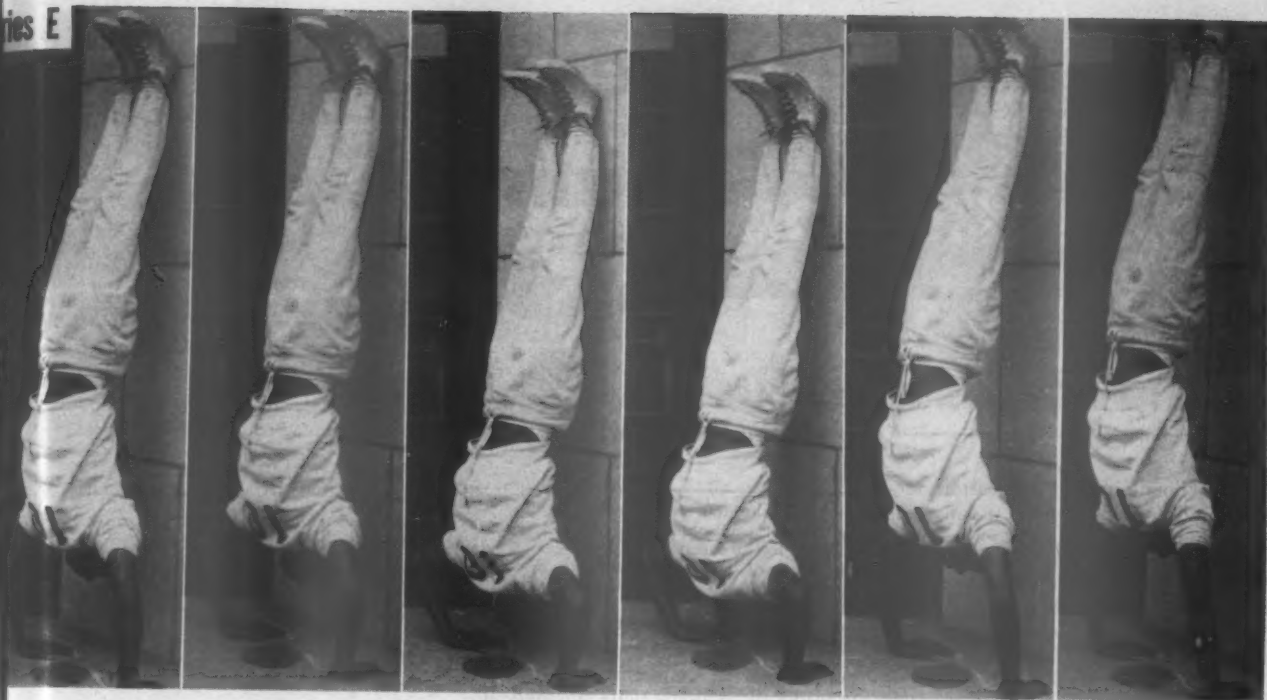


Series C

Series D



ies E



ies F



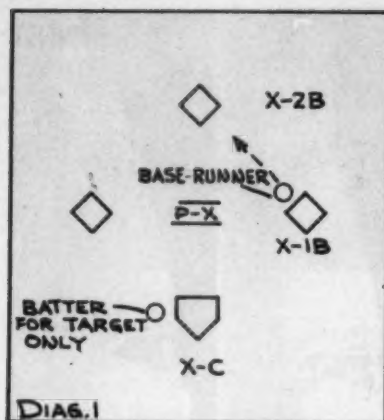
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The Gym as a Training Camp for Baseball

By **SIDNEY SHULMAN**

Baseball Coach, Eli Whitney Vocational High School, Brooklyn, New York



THE climate in the Northeastern section of our country will usually permit only two weeks of outdoor baseball practice before the first game is played. Since this time is rather inadequate to prepare a varsity baseball team for competition, substitute measures must be taken.

The baseball coach, by employing a few well-organized drills, can utilize the gymnasium as a training camp for the varsity baseball squad.

Many of the individual and team skill fundamentals necessary to make the team a functional working unit can be taught and practiced successfully within the confines of the gymnasium until the weather will allow the team to be taken outdoors.

In the multi-purpose drill (Diagram 1), home plate, first, and second base are set up in the gymnasium. Infielders take their respective positions, and a base-runner is placed on first base.

This drill can be used to teach pitchers how to hold a man on first.

The skill fundamentals which should be emphasized are: 1. The pitcher should keep his back foot on the pitching rubber. 2. No wind-up should be used. 3. By just turning his head, the pitcher should keep his eye on the rub-

Sidney Shulman completed work for his master's at Columbia in 1958 and has been at his present location for five years where his team of last spring won the division championship. In 1955 he coached the United States Paraplegic Olympic team which won the Para-Olympics held in London that year.

ber. 4. Before delivering a pitch, he should look at home plate. Pitchers are encouraged to throw to first, and are taught the importance of keeping the runner as close to the bag as possible.

Emphasis on accurate throwing to bases is one of the most important points. Throwing straight over the pitcher's head to second base on a line is also important and warrants continuous practice by the catchers.

This drill can also be used to teach runners the first base lead and stealing. In this case the following points should be emphasized:

1. *Proper lead-off.* The base-runner on first base is instructed to take approximately four steps — the equivalent of two steps and a slide — off the bag. He should stay on his toes, and when going for second, should start with a pivot on his right foot and then take a cross-over step with his left foot.

2. *Stealing hints.* The base-runner is instructed to watch the pitcher closely. When the pitcher drops his rear shoulder, raises his front elbow, bends his rear knee or raises his front heel, the base-runner can be almost sure he will throw to the plate but there may be variations in the case of individual pitchers.

After the players have learned and practiced these skills, this drill may be made more complex by adding third base and placing a runner on second base. This complex form of the drill also allows for the teaching of proper backing-up by the shortstop and second baseman on throws from the catcher.

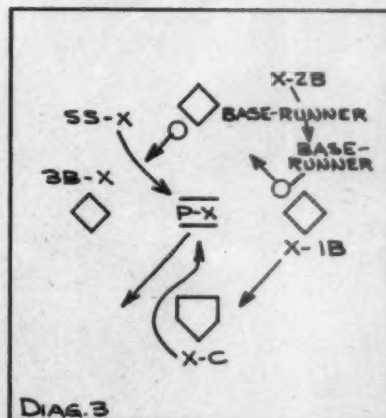
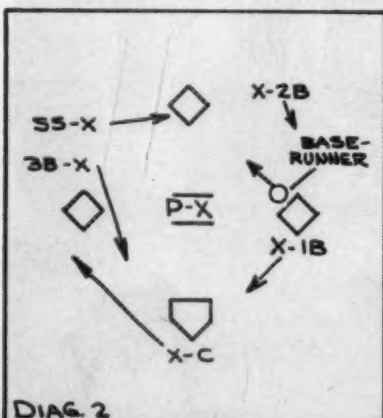
The coach can also utilize the indoor training period to teach defenses against bunt situations. In order to do this, an

infield as close to regulation dimensions as possible is set up in the gymnasium. Then a blackboard diagram explanation of the fielding responsibilities of each position is given by the coach. After the explanation, the infielders take their positions. First, they walk through their movements, then run through at half speed, with the coach calling the play and checking the moves in each instance.

The drill used for teaching defense against a bunt with a man on first is shown in Diagram 2. When they do not field the ball, the first and third basemen charge the plate and then return to their positions. The second baseman covers first. If the third baseman fields the ball, the catcher covers third. The shortstop covers second. The pitcher moves in to field the bunt, and if he does not field the ball, then he covers home.

Diagram 3 shows the drill that is used in teaching defense against a bunt when there are men on both first and second. The pitcher charges the third baseline. The third baseman covers his base. The shortstop fakes the runner back to second and continues in to cover the mound. The second baseman covers

(Concluded on page 42)



Drills for Quarterbacks

Middle Looking-Off Drill 8.

THE purpose of this drill is to provide the quarterback with practice in looking off. The drill coordinates those which have been discussed previously.

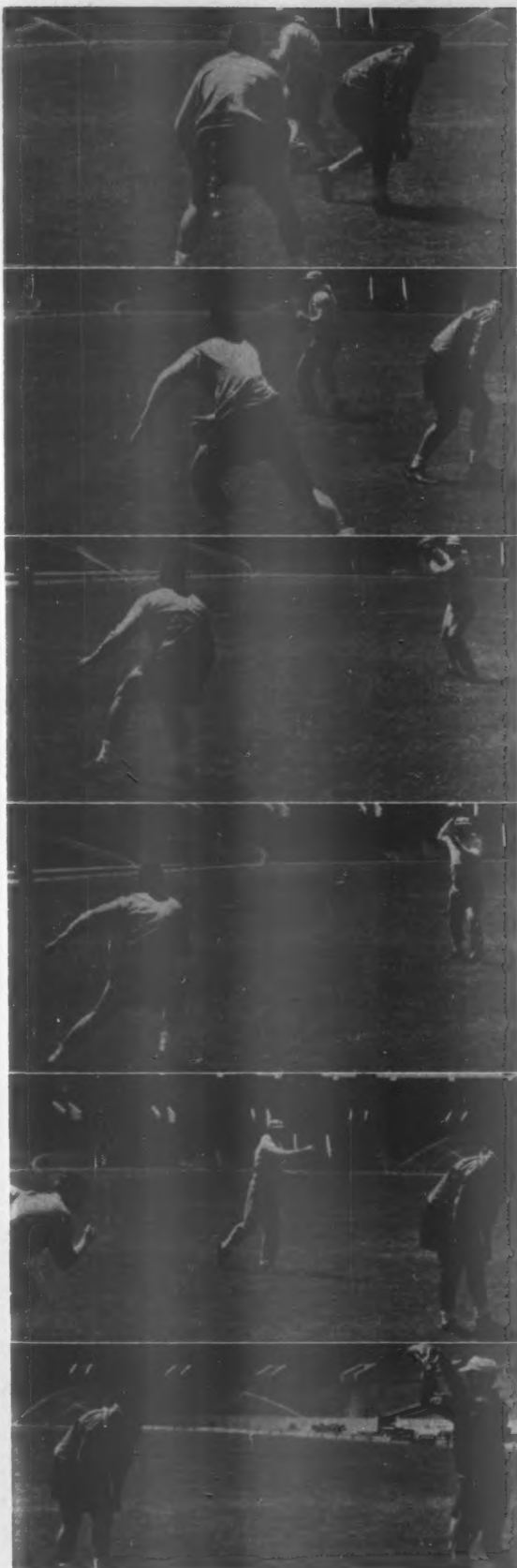
Instructions:

1. Place a center, quarterback, and just two receivers on offense.
2. Locate only one defender in the middle on defense. It is advantageous to place a deep back on defense. The deep back will receive good practice in improving his interception distance.
3. The two receivers on offense line up approximately seven yards from the center. They are not allowed to run all over the field, but must confine their routes to those the deep back has a chance to cover. However, they must not make things too easy for the deep back.
4. The deep back is instructed to play the quarterback's eyes 100 per cent of the time. Notice in Illustrations 1 and 2 that the quarterback has done such a good job in looking off that the deep back has started in the opposite direction.
5. In Illustrations 3 and 4, the quarterback is shown completing the pass to his receiver on the left who has executed a hook maneuver. Since he has done a good job of looking off, the defender does not have time to jam on the brakes and reach the ball in time.
6. As shown in Illustration 5, the quarterback is following through and the center is blocking an imaginary rusher to the side of the pass. Illustration 6 shows the receiver with his fingers well spread accepting the ball.
7. Again, it is necessary to place a time limit on the passer to prevent bad habits from forming and to make the drill fair for the pass defender.

Run as a feature each
month — September 1960 — June 1961.

Prepared by **GEORGE H. ALLEN**
Assistant Coach, Chicago Bears Football Team
and author of "Complete Book of Winning
Football Drills."

Demonstrated by Chicago Bear quarterbacks,
Zeke Bratkowski and Ed Brown



9 Split Vision Pass Drill

THE purpose of this drill is to provide practice for the passer in spotting the receiver and looking off. Since there are three defenders versus two offensive receivers the defense is favored. However, it is a drill that will test the passer and should be used after he has mastered the other quarterback drills which have been discussed in previous issues.

Instructions:

1. Station a center and a quarterback on offense with two offensive receivers.
2. Space the receivers a distance of 10 to 15 yards apart. They will execute the pass routes called by the quarterback in the huddle. A pass is called every time providing the defense with the advantage.
3. Notice in Illustrations 1 and 2 that as the quarterback retreats to pass he is looking straight downfield. This will freeze the middle defender and keep him out of the area where the pass is intended.
4. As shown in Illustration 3, the quarterback sets to throw. In this particular sequence his two receivers have executed hook pass maneuvers in the open spots. Since the outside receiver was covered, the quarterback located the open man between the middle safety man and the linebacker. Illustrations 4 and 5 show the ball in flight to the uncovered receiver.
5. This is also a good drill for linebackers and one or two of the deep backs. The distance separating them makes quick reactions necessary to break up the pass. If they can intercept the ball, they should. They should play aggressively and fight for the ball.
6. This is a fine early season or spring drill for sharpening the passer's timing in spotting the open receiver. It simulates game conditions with a definite edge toward the defensive men. However, if the quarterback is going to connect with his ends, he must locate the uncovered receiver quickly.
7. We like to place a time limit on the quarterback so that he does not form bad habits.

Coming Up

February

Split Vision (3-on-2)
Split Vision (2-on-1)

March

Red Dog Single Check-Off
Red Dog Double Check-Off

April

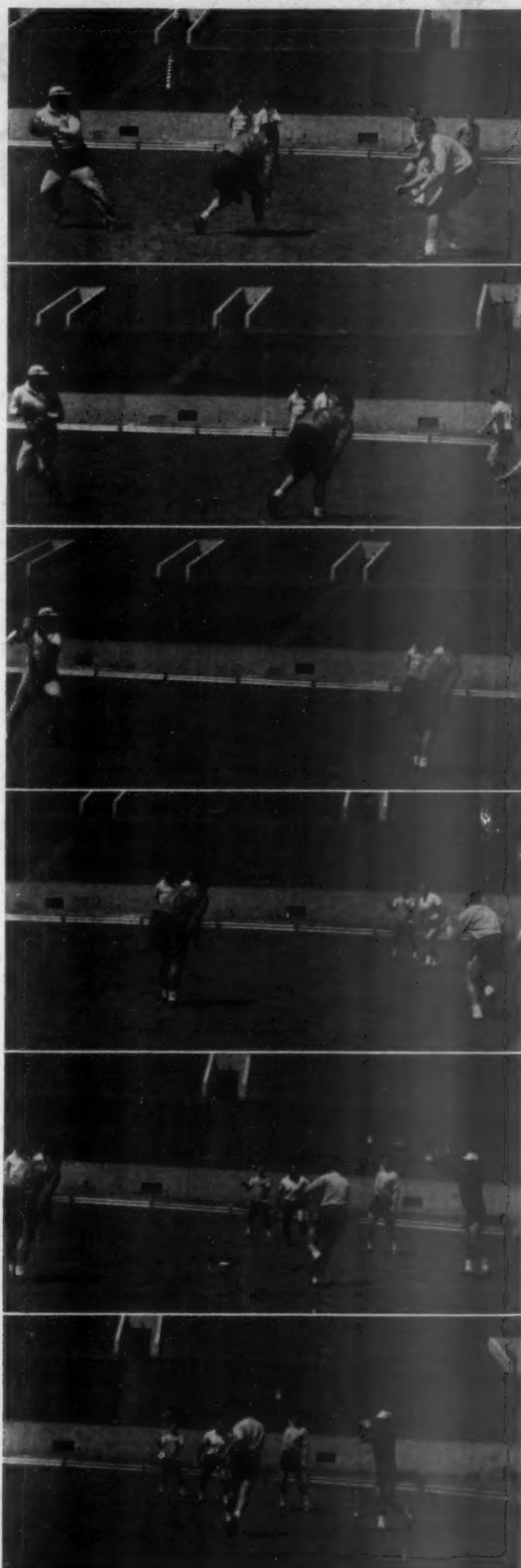
Quick Pass Drill
Quick Pass Footwork Drill

May

Position Timing Drill
Opposite Drill

June

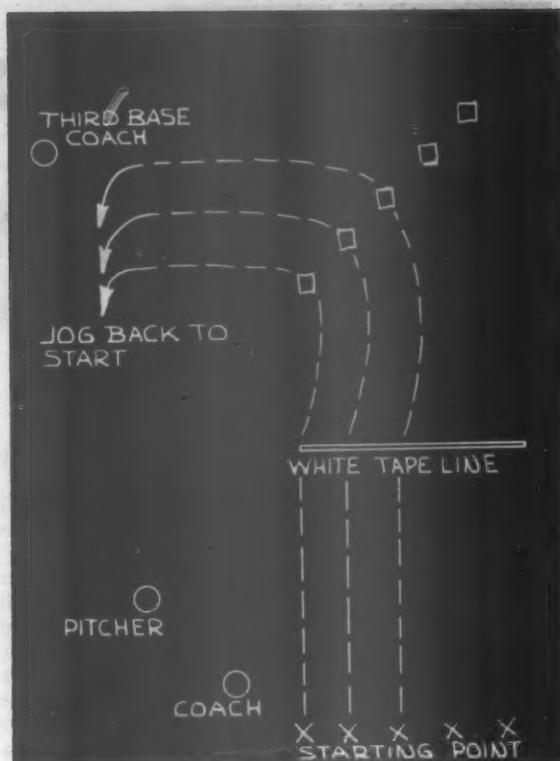
Production Drill With Center
Production Drill Without Center



Base-Running An Indoor Drill

By **ROBERT E. KIME**

*Athletic Department,
Wisconsin State College, La Crosse, Wisconsin*



AT this time of the year baseball coaches are once again mapping their strategy for the forthcoming campaign. Not all sections of the country are blessed with a climate that will allow practice to commence immediately in the open air; therefore, early practice sessions must be conducted in an indoor situation, and the majority of the teams will be forced to practice in gymnasiums until favorable weather conditions prevail.

When confronted with this type of situation, we developed a multi-purpose drill which is used to practice neglected techniques that are often left to chance, to aid in the conditioning of the athletes, and at the same time to assist in spotting talented youngsters.

Base-running was the technique selected for incorporation into the drill. As most gymnasiums today contain basketball courts approximately 84 to 96 feet in length, it is possible to ap-

proximate the 90-foot distance between bases within a gymnasium. The accompanying diagram shows how the floor area of the gymnasium is utilized.

This multi-purpose drill is run at every indoor practice, and as many men may participate at one time as space will allow. We start by having the participants face the coach, one behind the other. They are instructed to assume a balanced stance with their

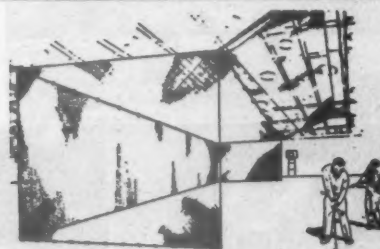
(Continued on page 30)

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Batting Styles of the Yankees

By **DON WEISKOPF**
College of Education, University of Idaho

THE 1960 World Series proved to be one of the most thrilling and dramatic classics in baseball history as the Pittsburgh Pirates defeated the New York Yankees four games to three. True, the Pirates are the world champions, but let it be said that the Bronx Bombers staged the most awesome offensive display ever seen in World Series competition. As a team, the Yankees set records for the most hits (91), most runs (55), most runs batted in (54), and the highest batting average (.338). Unquestionably, it was a spectacular performance by a truly fine baseball team. During the 1960 season the Yankees batted .260. They set an American League home run record of 193. Certainly, the 1960 New York Yankees are deserving of a hitting study. The following five Yankee players have batting styles which are characteristic of the best principles in hitting.

Roger Maris. No one can deny that the addition of Maris was most instrumental in the return of the Yankees to supremacy in the American League. As a result, the former Kansas City right fielder was named the league's most valuable player in 1960. Throughout

the season Roger demonstrated great power at the plate, fine speed, and an accurate arm. He led the league in runs batted in with 112 and batted .283. Although he was second to Mantle with 39 homers, Maris' slugging average of .581 topped the circuit. While he hit only .267 in the World Series, he managed to send two Pirate deliveries soaring into the distant stands.

It was not long before opposing pitchers learned that Maris and Yankee Stadium were made for each other. A pull hitter with power, his left-handed drives fit the Ruth-modeled right field. Six feet tall, and with 197 pounds of muscle to put into his swing, Maris is an authentic power hitter. Along with Mantle, he gives the Yankees the most potent one-two punch in baseball.

When he is at the plate (Series A), Maris is a picture of explosive power and strength. Using a regular stance, he holds his bat high, with his hands at the end. Notice that Roger has his bat behind his head whereas Mantle (Series B) uses a straight-up position. Striding from 3 to 5 inches, Maris' body bends into the swing, bringing his hips and shoulders around together. The ball is being met out in front by a level bat. Roger's cocked wrists roll over at contact with the ball. The



ROGER MARIS



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MICKY MANTLE

weight which is transferred from his left back foot to his right front foot gives him the follow-through necessary to send the ball sailing over the fences.

Because we believe these to be such exceptional pictures for instructional purposes, arrangements have been made to reproduce them as a wall chart. The wall chart will measure 35" x 23" or approximately twice the size of these two pages. The pictures will be printed on heavy paper and will be mailed unfolded. There is a charge of 50 cents to cover the cost of printing, mailing tube, and postage. Orders should be sent promptly as only a limited number are being ordered.

Maris gives a great deal of thought and care to selecting the right bat. He uses a 35-inch, thin-handled model, but the weight may vary from 31 to 34 ounces. He will use the heavier bat when he feels he has found his swinging groove.

MOOSE SKOWRON

TONY KUBEK

Roger claims: *Any slump is a matter of timing. That's why it's so hard for a player to maintain the rhythmic swing you've got to have for good hitting if he isn't in the line-up every day. Any time I've been out, I've found it takes quite awhile to adjust my timing after I get back in.*

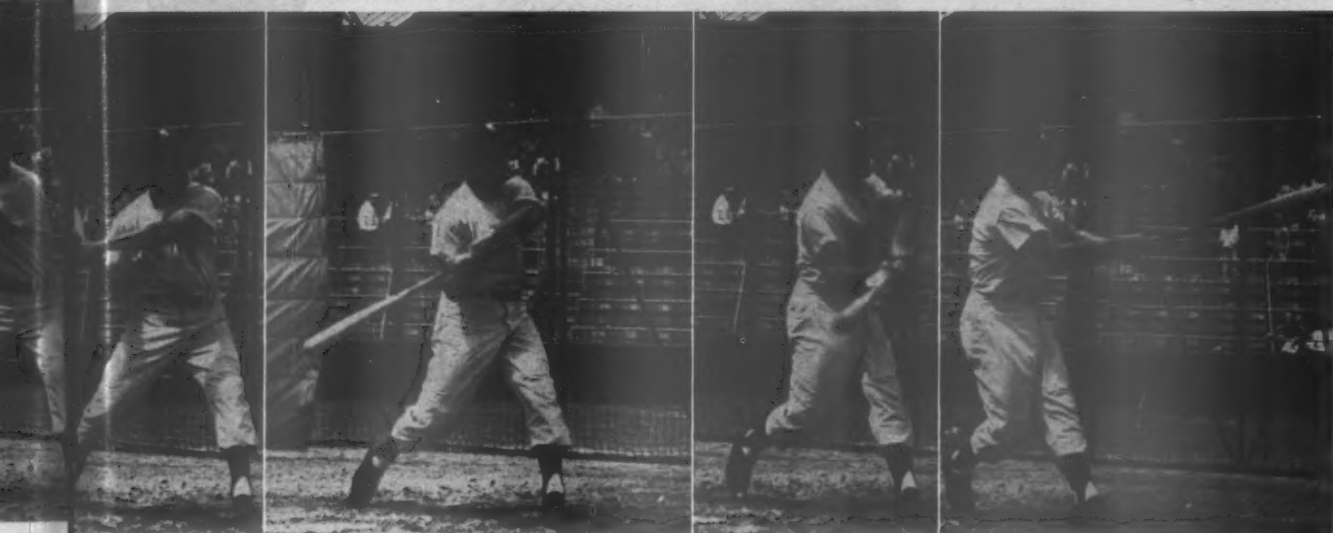
The averages show that Maris hits right-handed pitchers far better than he does left-handers, which is natural. However, Roger maintains: *I can hit left-handers as good as I can right-handers when I'm in a hot streak, and I get my share of home runs off them, too.*

Mickey Mantle. This great center fielder of the Bronx Bombers has been called the most powerful hitter in the game. When the Mick is enjoying good health, he is undoubtedly the most feared batter in baseball. Certainly, Mantle is the game's most powerful switch hitter of all time. Casey Stengel

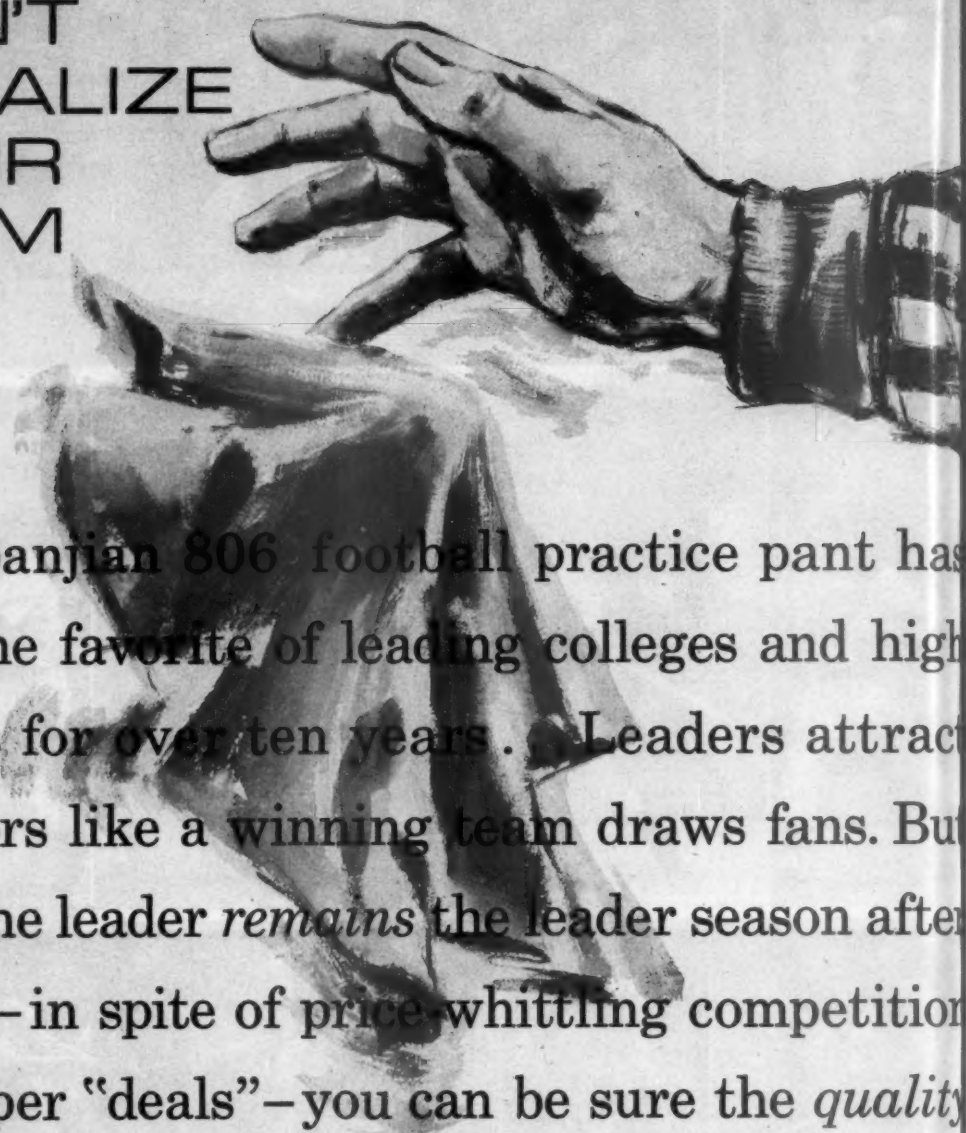
(Continued on page 55)

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New Books

First and Ten, by "Duffy" Daugherty and Clifford B. Wilson, II. Published by Wm. C. Brown Co., Dubuque, Iowa. Two hundred and fifty-six large size pages. Publication date February. Reviewed from galleys. Price \$5.00.

Designed primarily as a textbook for college football theory classes, the superb illustrations and diagrams make this a *must* football book for the practicing coach as well. For each fundamental the authors show and describe the proper method of execution, then they outline the coaching tips involved, and finally present corrective drills.

The shoulder screen, brush, cross-body, reverse, crab, and roll blocks are covered as are tackling and fumble recovery. Under the heading "Individual Fundamental Play for the Backfield," will be found full coverage of the myriad of fundamentals both offensive and defensive required of today's polished player. The same can be said for individual line play as well as offensive team play for both the backfield and the line.

All of today's popular offenses are analyzed and numerous play diagrams are included. In all, thirteen offenses or variations are discussed. Numerous sequence photos depict basic running and passing plays. Many hundreds of feet of film were shot using the *Athletic Journal's* high-speed camera. The publishers are to be commended for sparing no expense in placing this fine definitive book on the market. We think it is one of the truly top football texts.

Bread and Butter Basketball, by Alvin F. "Doggie" Julian. Published by Prentice-Hall, Inc., Englewood Cliffs, N. J. Three hundred and two pages. Publication date Dec. 1. Price \$5.95.

"Doggie" Julian is one of the most astute basketball mentors in the country which his record as coach of Holy Cross, the Boston Celtics, and Dartmouth College will attest. His entire coaching philosophy is built around "the 26 magic numbers" as he calls them. For example, number 6 is: "When in trouble make a V! 'V' for victory." He then goes on to clarify this statement by saying: "A player never goes wrong when he feels he is in the wrong position if he makes a V, because

he 'clears out' and takes his opponent with him."

Having stated these basic truisms he delves into formation principles and plays, man-for-man attack, the Dartmouth Offense Auxiliary, attacking the zone, offensive counters, feeding the pivot and breakdown drills, defenses, practice sessions, and drills. It's all basketball and it's all there amply diagrammed. A whale of a book by a great student of the game.

Building a Championship Football Team, by Paul "Bear" Bryant. Published by Prentice-Hall, Inc., Englewood Cliffs, N. J. Two hundred and forty-four pages. Publication date Nov. 18. Price \$5.35.

There is a wealth of football information to be found in this book. Particularly do we like "Bear" Bryant's detailed and extensive coverage of defense. In fact, he thinks so strongly of this phase of the game that he starts out with a discussion of it before going into the various offensive maneuvers. Bryant's unique system of defensive signal calling is carefully analyzed and full attention is paid to pass defense.

On the offensive side both the running and passing games are discussed in the manner in which Bryant and his staff employ them. Attention should be called to the excellent treatment of his drills as well as the discussion of the spread punt which all Bryant coached teams have exploited to the fullest.

Equipment and Supplies for Athletics, Physical Education, and Recreation, compiled by The Athletic Institute, Room 805, Merchandise Mart, Chicago 54, Ill. Price \$2.50.

The result of a workshop co-sponsored by The Athletic Institute and the AAHPER, the manual is designed to aid in the purchasing, inventorying, accounting, maintenance, etc., for various types of athletic and physical education equipment. Out of a panel of forty-eight delegates there was one high school coach, one junior college coach, three college athletic directors, one college equipment manager, two equipment manufacturers, one reconditioner, and one sporting goods dealer, the balance being recreation or physical edu-

cation personnel. However, a survey made by the *Athletic Journal* showed that better than two-thirds of the coaches are responsible for the purchase of the athletic equipment in their schools.

Adelphi College Coaching School Notes, compiled and published by George Faherty, Adelphi College, Garden City, L. I., N. Y. Sixty-two pages. Price \$1.00.

This manual includes the lecture notes of Harold Andreas, Neal Baisi, Clair Bee, Robert Forwood, John Nucatola, Adolph Rupp, and Howard Sharpe as presented at last summer's always popular Adelphi College Basketball Coaching School.

You Have to Pay the Price, by Earl Blaik and Tim Cohane. Published by Holt, Rinehart, and Winston, Inc., New York 17, N. Y. Four hundred and thirty pages. Publication date Oct. 24. Received for review Nov. 1. Price \$4.95.

This is not a book on technique, rather it is a nostalgic account of Red Blaik's twenty-five years of coaching. Throughout is "Red's" philosophy that nothing comes free and this point is definitely proved on the football field.

Converse Basketball Yearbook, edited by Wally Lord. Published by Converse Rubber Co., Malden, Mass. Fifty-two pages. Free.

For thirty-nine years Converse Rubber Co., has preserved the records of the game and makes them available as a service to coaches. As in previous editions, the yearbook contains pictures of high school and college teams, All-American selections, short technical articles, and just about every conceivable piece of information anyone could want on the great game of basketball. A well done to Converse and editor, Wally Lord.

Swimming Beginner to Champion, by Edward Eissey and Ronald Gainsford. Published by Gainsford Publishing Co., West Palm Beach, Fla. Thirty-eight pages. Price \$1.00.

Edward Eissey handles the part of the book dealing with the beginner, while Ronald Gainsford discusses the competitive program. Both men are well qualified as they have coached at all levels from young children through those of college age. Numerous illustrations and a concise text combine to make this booklet an excellent teaching aid.

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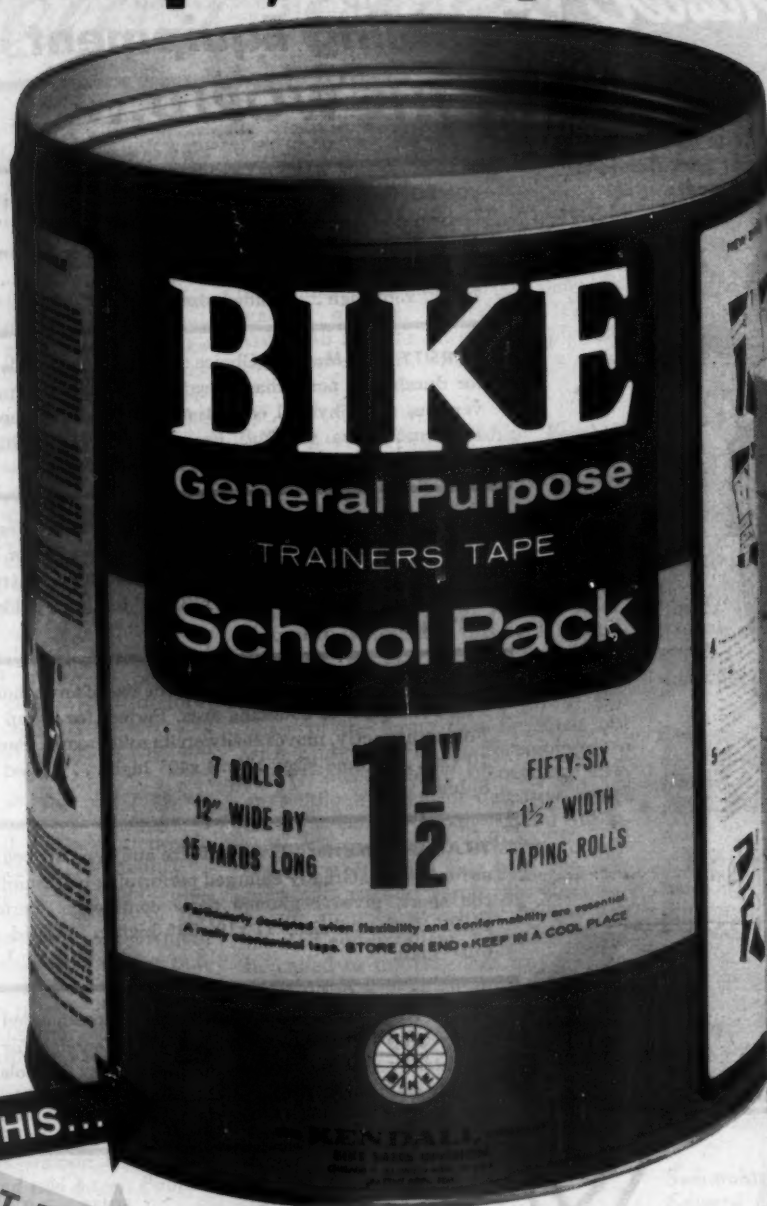
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The Effect of Whirlpool on Strength — Endurance

By RALPH L. WICKSTROM

Men's Physical Education Department, University of Wichita

THE use of a whirlpool bath by a player on the day of a game has been viewed with apprehension by coaches. A belief has been nurtured that the whirlpool bath has a prolonged sapping effect which would detract from the player's performance. Consequently, in countless instances where a therapeutic treatment could have been of value on the day of a game the coach's decision was to forego it.

Why should coaches have a fear of a whirlpool treatment on the day of a game or in extreme instances even on the day prior to a game? The answer is because of lack of information or because of misinformation. A human foible is fear of the unknown and there is much that is not known about the effects of the whirlpool bath upon physical performance. Therefore, it is understandable that coaches would be apprehensive about using it where it could possibly interfere with the effectiveness of the play of one of their athletes.

There are many ideas about the effects of the whirlpool bath which have no basis in fact and yet are being perpetuated. Perhaps an examination of some of the fear-provoking beliefs would be valuable in understanding what is proper and what is improper use of the whirlpool bath.

Whirlpool bath for weight reduction. The whirlpool bath produces weight loss by dehydration or reduction of water in the body. Dehydration by any method is not healthful for athletes and when accompanied by severe dieting can produce injurious effects. The astute wrestling coach can attest to the truth of that statement.

Whirlpool bath for treatment of injury. For injuries that respond to gentle massage and heat the whirlpool treatment would be beneficial. This is a form of therapy that can, in most instances, be carried out by the trainer and the coach without the assistance of a special therapist. The team physician or medical supervisor should recommend any special treatment for serious injuries. If this principle is followed, the whirlpool bath is not a dangerous form of therapy

and has no harmful effects.

Physiological effects of a whirlpool bath. A whirlpool bath for a part of an extremity such as a wrist or an ankle has a limited effect upon the balance of the body. There is a feeling of heaviness and fullness due to the concentration of blood in the area, but the feeling is mostly localized. As more of the body is submerged in the bath, the immediate physiological effect on the whole body is increased. If it is necessary to submerge the body to chest or shoulder level for 15 to 30 minutes, the apparent effect is more drastic. This is especially true if the temperature of the water is between 105 and 110° Fahrenheit. Upon rising from the bath the person might feel light-headed, drowsy, weak, and sluggish. It is the memory of this temporary feeling that persists in the minds of athletes and coaches and is transferred to the performance during some athletic contest. Psychologically, the whirlpool bath is rejected because it would seem that since it makes an athlete feel less vigorous after treatment it can interfere with performance in a game later that same day.

The fact is that the immediate feeling during and after a whirlpool bath is a necessary accompaniment to the therapeutic effect and is more than likely short-lived. Some pertinent experiments support this view.

Whirlpool bath and muscular strength-endurance. Several years ago while doing some preliminary work on the effect of the whirlpool bath on strength, we found it was questionable whether strength was actually decreased as a result of treatment of this sort. Five minutes after taking a whirlpool bath in water at 110° Fahrenheit, ten minutes during which the athlete was submerged to neck level, grip strength was higher for him than on any previous recording. It is needless to say that such a treatment was excessive in terms of normal usage and caused a temporary feeling of physical depression. The phenomenal aspect was that despite the feeling of drained physical vigor,

strength remained at a very high level. This encouraging finding has led to further experimentation dealing with the important aspect of strength-endurance.

Recently, some significant information was made available as a result of studying the effect of the whirlpool bath on strength-endurance of high school boys. Twenty high school athletes who were well conditioned and participating in basketball, wrestling, gymnastics or swimming were used as subjects. Each athlete was tested under various conditions following 20-minute whirlpool baths in which he was submerged approximately to the level of his navel. Obviously, more of the body was submerged in this study than is usually required for treatment of ankle, knee, and thigh injuries. A test was devised for measuring the effect of the treatment upon performance of strength-endurance of the leg.

A 20-minute bath at 104° Fahrenheit followed by one hour of rest produced a slight decrease in performance. When the 104° Fahrenheit treatment was followed by a two-hour rest period before testing, there was a significant increase in strength-endurance. The majority of whirlpool baths for treatment of athletic injuries will not exceed 104 to 105° Fahrenheit. However, in order to explore the possible effect of rather extreme treatment, the water temperature was raised to 110° Fahrenheit.

Raising the temperature of the water in the bath had a more pronounced physiological effect. The 20-minute whirlpool treatment at 110° Fahrenheit followed by one hour of rest significantly decreased the strength-endurance of the leg. When the rest period after the treatment was increased to two hours, the early physiological effect had been countered and there was a slight increase in performance.

In summary, it may be said that strength-endurance of the leg is not decreased if the rest period following the whirlpool treatment is two hours. This is true even if the temperature of the water is at the upper limit of recommended usage. With two hours of rest after treatment the performance may even be improved.

Recommended practices. From the findings of experimental work and careful observations, some definite practices relative to the use of a whirlpool bath for treatment of injuries can be made.

1. Give a whirlpool treatment for injuries at least two hours before team practices or wait until after practice. The severity of the injury and the recommendation of the medical supervisor should determine the amount of activity permitted the player during practice. An injury definitely weakens the area involved and reduces the individ-



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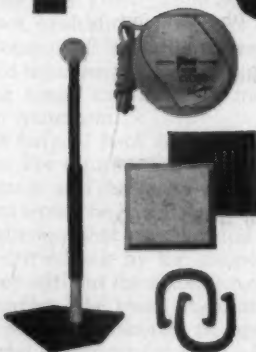


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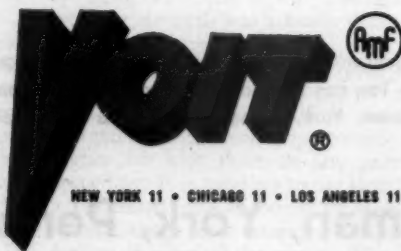
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ual's capacity for doing strenuous work. This fact should be remembered so the blame for poor performance during practice will not be traced erroneously to the use of the whirlpool bath.

2. *Allow between two and three hours of rest following a whirlpool treatment on the day of a game.* The player who is scheduled to play in a game should have recovered sufficiently from his injury so there is little handicap to his playing ability. Poor performance in an athletic contest by a person who has recovered from an injury can be explained in many ways. It could be due to missed practices caused by the injury, an unconscious favoring of the injured area, or just one of the bad days any athlete could have. The coach should not direct the blame and subsequent criticism to the use of the whirlpool treatment if an injured player does not perform up to expectation.

3. *Reassure the athlete that the whirlpool treatment will be of benefit in terms of helping him recover from an injury and will not interfere with his playing.* Injured players should be carefully supervised in practice so they do not subject the injured area to stresses that will aggravate it or interfere with recovery. The whirlpool bath can provide a temporary sense of recovery which may cause the player to abandon a prudent plan of limited exercise during a practice.

The coach and trainer should learn as much as possible about the use of the whirlpool in treating athletic injuries. It is not an instrument to fear, but is a potent weapon in dealing with many of the common injuries incurred in athletics.

From Here and There

(Continued from page 4)

ciation showed that 27 per cent of the member schools had practically all of their squad members wearing mouth protectors . . . In North Dakota 37 per cent of the schools have their athletic programs subsidized by the school boards. Of the schools not operating with direct assistance 72 per cent relied upon admissions, while 29 per cent augmented the admissions with carnivals, etc. North Dakota schools average slightly better than \$800 per school per year for athletic equipment . . . Only thirteen states prohibited a boy from playing on a non-school team . . . Bob Karnes, Drake's track coach, won nine Big Seven Conference two-mile races while competing at Kansas. Three of these were in the fall two-mile run, three at the conference indoor meets, and three at the conference outdoor meets.

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Indoor Base-Running Drill

(Continued from page 15)

feet spread approximately shoulder width apart and their body weight equally distributed so there is no pronounced lean in either direction. The position approximates a squat with the arms pointing toward the floor or spread to assist in balance.

A cross-over step is utilized for a fast start which enables the runner to gain additional distance on his first step. The mechanics of the body position and the cross-over step are well known, and it is not our intention to describe these techniques in detail.

After assuming the lead-off position, the runners start on a verbal command given by the coach such as *go*. They should use the correct techniques in starting for second base. As shown in the diagram, the coach is in a good position to observe the starting technique and to see how fast the runners can reach maximum speed. They are instructed to sprint until they reach a tape line spread across their paths approximately 25 feet from second base. The tape line is used as a signal for the runners to glance toward the third base coach. This phase of the drill is utilized to teach runners to look at their coach before reaching second base. Too often, base-runners run blindly into second base and stop. Then, after stopping, they are late starting for third base and have to return whence they came or are thrown out while attempting to reach third. If the runner had been alert and aware of signals from the third base coach, he probably could have continued on into third base, drawing a throw, which might allow the batter to get into scoring position on second base. The third base coach, usually an assistant coach or senior player, signals instructions to the runners as they glance at him. Occasionally, the coach should stop the runners at second base so they will be aware of the signals.

After glancing at third base, the runner should start the loop into second base which will allow him to sprint directly to third base without running out of the base path toward the short-stop. Rubber non-slip bases to represent second base are placed as near the 90-foot mark as possible. The bases are not arranged in a straight line, but are angled back so the runners will not collide as they round second and start toward third base. This angled placement will cause the back runners to run a slightly longer distance but it is necessary to provide them space in which to maneuver. They continue to sprint into third base at which time they slow to a

jog and continue back to the starting position.

After the runners have had sufficient practice in mastering the cross-over step, the first variation is added to the drill. Rubber non-slip bases are used to represent first base. The runners start from this base and are instructed to use a shuffle step to reach the lead-off position. A coach should observe that the

players do not cross their feet or become careless and place all of their weight on one foot thus producing a lean away from first base. An alert pitcher will pick off a man who is careless in his lead-off technique. Another thing the coach should watch is to see whether or not the runners are taking a sufficient lead-off. Experience has shown that many men are reluctant to leave the security of a position just one step from first base. The distance they may move out in making the preliminary lead-off is an individual matter

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depending on their reactions to a visual stimulus. However, most baseball players can safely move out at least ten feet from the base. On a verbal signal the runners move out from first and make the start for second on a similar signal.

A sufficient amount of time should be spent on the lead-off technique before the second variation is added. This variation consists of adding another command such as *back*, which will return the men to first base from their lead-off positions. By adding a return

command, the runners are kept alert to the fact that balance must be maintained in order for them to be able to move in either direction. More time should be spent on the *go* command, because conditioning is a secondary objective of the drill.

As the runners progress in reacting to verbal commands, a pitcher may be added to bring the drill closer to actual game conditions. In the third variation, one pitcher can be used for a certain period of time or several may be rotated according to the coach's desires.

This addition will allow the pitchers to work on their stretch position and throwing motions either to first base or to home plate. By having a senior pitcher or another coach working with the pitchers, many faults may be noted and readily corrected. Now, the base-runners will have a visual stimulus to speed up their reactions. Runners in position, and all others, should study the pitcher's actions for individual idiosyncrasies which might tip off his intentions. Simultaneously, the base-runners learn to study different pitchers and the team's pitchers have their individual actions analyzed to correct their delivery form.

When the pitcher starts his preliminary stretch, the runners should edge into their lead-off positions. The pitcher actually goes through his throwing motions without a ball, and is encouraged to use the motion of delivering the ball to the catcher the greater part of the time. An occasional pick-off move to first base keeps the runners alert. As the pitcher's intentions become clear, the coach assists the run-

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Robert Kime was head baseball coach at Waterloo, Wisconsin, High School compiling an 18-5 record. For the next three years he was assistant baseball coach at Wisconsin State College. He spent the past year at Ohio State doing graduate work. This school year Kime is back at La Crosse.

ners with verbal commands. He may wish to change his position during this variation so he will be able to see the base-runners and the pitcher at the same time.

The fourth variation is a duplicate of the preceding one with the exception that all verbal commands are eliminated and the base-runners are entirely on their own. It is during this variation that individuals with the courage and initiative to become good base-runners are discovered. In the third and fourth variations, emphasis is still on the *go* aspect to keep the men moving through the drill.

If more space is available, as there would be in a field house, a catcher and a first baseman can be added to enable the pitchers to actually throw a ball.

While practicing the drill, special safety precautions should be used. Care must be taken that the runners are not subjected to hazards in the gymnasium such as projecting bleachers and sharp corners of walls and door casings. Runners should be encouraged to wear sweat pants which allow them to slide along the floor if they should fall, instead of suffering aggravating floor burns. This drill, with its variations, has been used for several years without any injuries or burns.



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[†]Patent No. 2,785,407

Teaching Batting In Pre-Season Training

By WILLIAM H. HATCH

Baseball Coach, Porterville, California, Union High School

"GREAT hitters are born, but good hitters are developed" is the slogan for the baseball teams of Porterville High School and the batting philosophy of our coaching staff. Our objective — the development of good hitters — can be accomplished through sound teaching procedures, a thorough knowledge of batting fundamentals, and well-organized batting drills.

In coaching batters, the first two weeks of the practice season are considered crucial for teaching the correct fundamentals and developing a positive attitude toward batting. We believe, that by devoting the major portion of our practice during this time to batting fundamentals and attitudes, the hitters will be off to a better start and gain confidence in their batting ability.

Several days before the training season begins several short classes in batting are held in which we try psychologically to prepare the boys to think positively about batting and at the same time demonstrate good batting fundamentals and form. In the beginning, the coach must gain the confidence of the players so they will have faith in his ability to direct and guide their batting careers. An attempt is made to gain the players' confidence by demonstrating a sound knowledge of batting and presenting well-organized batting lectures interspersed with illustrations of major league batters who have mastered the techniques being taught.

Once confidence is gained, two adverse mental attitudes toward batting — fear of being hit by a pitched ball and lack of confidence in hitting ability — must be broken. We explain that fear is a natural reaction which greatly

lowers batting ability because the batter is inclined to pull away from the plate on every pitch. It is pointed out that batters with normal reactions and good concentration are able to avoid most inside pitches, and if they are relaxed and roll with the ball, being hit is not harmful or even painful. The use of statistics showing how few injuries occur in baseball is also helpful in allaying fear.

When trying to break the attitude of lack of confidence, positive psychology is applied. Each batter is told that he must believe he is a better batter than the opposing hurler is a pitcher. If he will say, *I can get a hit rather than I hope I can get a hit*, this attitude can make a difference of 100 points in the batting average. Seeking a positive response at the end of this class, several boys are asked if they are good hitters. If a negative or qualified response is forthcoming, positive thinking is re-emphasized.

In the final phase of our batting classes, instructional films on batting are shown and discussed. Films of major league batters are projected and analyzed, and hitting form is demonstrated by one of our better hitters. Then the correct fundamentals are reviewed, and an illustrated batting manual is distributed at which time reading and study assignments are

Bill Hatch played two years of professional baseball in the St. Louis Cardinal chain upon graduation from high school. After graduating from Southeast Missouri State College and completing his military service, he coached in Missouri and Illinois high schools before accepting his present position four years ago.

made in preparation for the first day of practice.

On the first day of practice and every day thereafter for the next two weeks, a dry run batting drill is conducted. For this drill the squad is divided into pairs. One player is a bat swinger while his partner stands behind him to check on form and fundamentals. Before any bat swinging is started, the coach reviews the fundamentals of hitting and instructs the swingers through each step of batting. During this drill batting is taught in the following seven steps:

Step 1—Grip. Our hitters are instructed to choke the bat about one inch with a firm, but not a tight grip. The base knuckles of one hand should be lined up with the middle knuckles of the other hand forming a flat surface of the fingers on top of the bat.

Step 2—Plate Coverage. All hitters are instructed to touch the end of the bat just outside the far edge of home plate upon stepping into the batter's box.

Step 3—Stance. The hitters are told to assume a normal relaxed position in the batter's box with their shoulders level, arms well away from the body and back, knees slightly bent, feet about shoulder width apart, body weight evenly distributed on both feet, and the front foot opened slightly.

Step 4—Concentration. As soon as the stance has been learned, the hitters are instructed to focus both eyes on the ball (imaginary in this drill) with the intent of watching it until it hits the bat.

Step 5—Stride. Our hitters are cautioned to take a short stride in the direction of the pitch. We have them hold their weight back as they stride and then transfer it forward on the swing.

Step 6—Swing. When the hitters are striding, they are instructed to bring their bats back slightly in a cocked position. As the stride is completed, the body weight is brought forward against a stiffened front leg and the bat is whipped forward in a smooth, level arc. At the moment the wrists begin to turn over, the hitters are told they are hitting the ball at this point, and must snap their wrists for power.

Step 7—Follow-Through. Since the follow-through is the natural continuation of the swing, our hitters are instructed to let the momentum of their swing carry the bat around until it hits them in the back.

After instructing the hitters on these fundamentals a step at a time, each bat swinger is told to imagine a pitcher is facing him. Then the coach calls the wind-up and delivery and the batters

swing at the imaginary pitch. Individual faults are corrected by the coach and the partners of the bat swingers. After several repetitions, the swingers change places with their partners and the same procedure is followed. The coach may vary this drill by calling the location of the pitch — high inside, low outside, etc., in order to see whether the batters are striding with the pitch.

The dry run batting drill is our basic instructional drill. Through the use of this drill we are able to teach the correct fundamentals as the batters are guided in each step of batting. Also, it is our feeling that the players who are checking the form of the bat swingers will become aware of the correct fundamentals as they watch for the faults of their partners.

Two other drills which are used on an individual basis are a mirror drill and a shadow drill. In the mirror drill the bat swinger watches his reflection in a mirror while he is applying the correct fundamentals to imaginary pitches. This drill is recommended for home use only and the hitters are encouraged to practice it every night. The shadow drill is the same as the mirror drill except the bat swinger watches his shadow instead of his reflection. This drill should be used throughout the season any time a player has no other duties.

Batting tees are used extensively the first two weeks of practice and then are employed for individual remedial work only. The squad is broken into pairs again with one pair for each tee. One partner hits off the tee while the other watches for faults. Twenty to 30 balls per player are hit off the tees every day. Although the batters concentrate on all fundamentals, a level swing, good wrist action, and follow-through are especially emphasized.

One of the problems facing young hitters is swinging at bad balls. Usually, the major cause of this hazard is a lack of knowledge of the strike zone. In order to teach the strike zone and ultimately cure the habit of swinging at bad pitches, our hitters are given an umpiring drill several times a week during the practice season. In this drill we use a batter, pitcher, and a catcher. When the pitcher throws, the batter puts all of the batting fundamentals into action except the swing and calls out whether the pitch was a strike or ball as does the catcher. The batter stands in until he gets three called strikes or four balls. This drill is especially beneficial during the early season because it not only teaches the strike zone, but also helps the batter to follow the ball into the catcher's mitt and to stride with the pitch.

(Continued on page 54)

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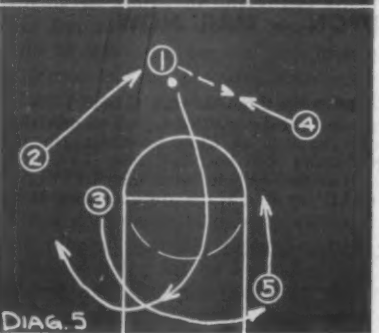
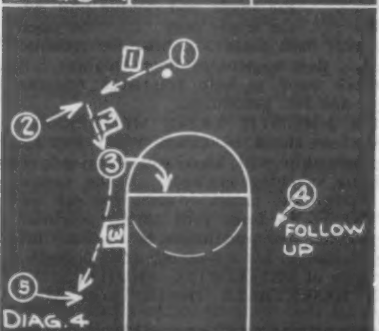
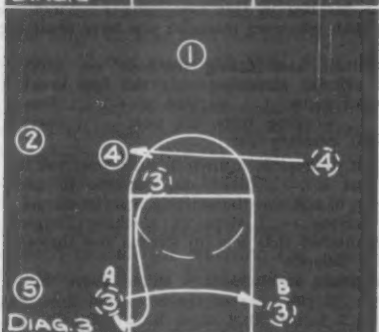
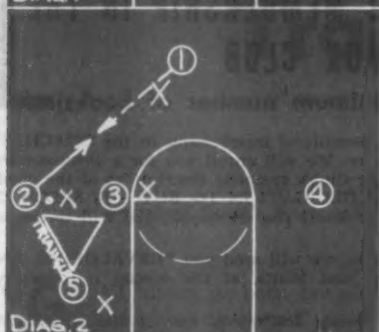
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A Combination Offense for Man-for-Man and Zone Defenses

By JAY McWILLIAMS

Basketball Coach, Trinity College, Hartford, Connecticut



THE 1-3-1 offensive pattern may be used against either a zone or a man-for-man defense. Coaches who are looking for a means of simplifying their offenses will find it possible with the 1-3-1 formation. By using some variations of the standard pattern many situations can be met.

Let us examine some of the advantages of this alignment. It is effective against most zone defenses because of the fine positioning of the players, both in following up missed shots and in spreading the defense. The overload principle, which is used frequently against the zone set-up, is employed in the 1-3-1. Spreading the defense and overloading an area will make it difficult for the defense to cover adequately.

We stress the use of the overhead and bounce passes. Emphasis is also placed upon making the transition from offense to defense with the greatest possible speed, due to the fact that there is only one safety man back instead of the two that are sometimes employed. Good ball-handling is a requisite and we want the players to pass the ball rapidly but accurately.

In attacking the man-for-man defense with the 1-3-1, spreading the defense is again a prime factor in using the formation. The follow-up strength is also vital, and if a coach happens to have two fairly tall, agile men moving around the basket their value may be exploited in this pattern.

Diagram 1 shows the basic positions the players assume at the start of the offense when a zone is employed. When they are moving the ball against a zone, our players set up the triangle alignment. They are instructed to pass the ball to the free man. O1 passes to O2

and then moves to an outlet position so he can receive the outlet pass if the other players are covered. Upon receipt of the ball, O2 will attempt to feed either O3 or O5, depending upon which man is open.

Sometimes in order to get the ball to O5, it may be necessary for him to move toward the baseline (Diagram 2).

As shown in Diagram 3, the middle man is executing a maneuver that is used along with the overload. This movement is added to the offense, making it more difficult for the zone to compensate. We are also establishing the complete overload of the left side.

One of our favorite maneuvers is shown in Diagram 4. In this maneuver, the ball is passed from O1 down the side to O2. Then O5 breaks toward the sideline as if to receive a pass. However, O2 will feed the ball to O3, while at the same time O5 breaks back toward the basket and receives a pass from O3. O5 usually gets a close-in shot or is frequently fouled by the defensive man who is attempting to recover from being drawn toward the sideline. O4 follows in for the rebound or is free if the far-side guard attempts to double team O5. Now, O3 is in position directly in front of the basket for rebounding or an outlet pass.

This same 1-3-1 formation may be employed against a man-for-man defense. The main difference between offense for the zone and the man-for-man is the much greater use of movement and the utilization of the center cut by the front line feeder, and the constant interchange of positions by the pivot man, O3, and the baseline player, O5.

Diagram 5 shows the center cut, while Diagram 6 shows the second sequence of position changes.

As shown in Diagram 5, O1 passes to O4. Then O1 cuts for the basket. If he is open, O4 can give him a return pass. In case O1 fails to get free, he moves to the side replacing O2. Now,

(Continued on page 53)

Jay McWilliams captained the basketball team at Penn State in 1937 and then coached at Indiana, Pennsylvania, High School, VMI, and Alfred University before going to Trinity College in 1957. His team of last season compiled a very respectable 14 and 4 record.

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National Honor Roll

Competitor and School	Meet	Time	Competitor and School	Meet	Time
100-Yard Dash			Dellinger (Springfield, Ore.)	State	4:23.2
Newbury (E. Highland Park, Dallas, Texas)	Regional	9.5	Doherty (San Pedro, Calif.)	L. A. City Finals	4:23.2
Cowings (Fowler, Calif.)	West Coast Relays	9.6	120-Yard High Hurdles		
Foster (Sunset, Dallas, Texas)	District	9.6	Turek (No. Miami, Miami, Fla.)	State	13.7
Mannings (Bakersfield, Calif.)	S. Yosemite League	9.6	Bonds (Polytechnic, Riverside, Calif.)	State	13.9
Maroney (Snyder, Texas)	District	9.6	Cortright (Polytechnic, Long Beach, Calif.)	CIF So. Sec. Prelims.	14.0
Miller (Bowie, Texas)	Regional	9.6	Renfro (Jefferson, Portland, Ore.)	State	14.0
Townsend (Edgemont, Penna.)	Western Westchester	9.6	Biffle (Anton, Texas)	Red Raider Relays	14.1
220-Yard Dash			Dix (Marshfield, Wisc.)	State	14.1
Wesley (Carver, Houston, Texas)	District	20.6	Hicks (Coles, Corpus Christi, Texas)	Little Region Meet	14.1
Lacey (Fontana, Calif.)	Huntington Beach Relays	20.7	Johnson (Plainfield, N. J.)	Newark Meet	14.1
Watson (Jordan, Los Angeles, Calif.)	L. A. City Prelims.	20.7	Neathery (California, Whittier, Calif.)	Long Beach Relays	14.1
Miller (Bowie, Texas)	Regional	20.8	Nickolas (Vallejo, Calif.)	State Prelims.	14.1
Cram (Greenville, Texas)	Regional	20.9	180-Yard Low Hurdles		
Newbury (E. Highland Park, Dallas, Texas)	Regional	20.9	Bonds (Polytechnic, Riverside, Calif.)	State	18.8
Robbins (Hamilton, Los Angeles, Calif.)	Western League	20.9	Cortright (Polytechnic, Long Beach, Calif.)	CIF So. Sec. Prelims.	18.8
Watson (Sweetwater, Texas)	Regional	20.9	Woollever (Snyder, Texas)	Regional	18.8
Adams (Glenville, Cleveland, Ohio)	State	21.0	Johnson (Plainfield, N. J.)	State	18.9
Cowings (Fowler, Calif.)	State	21.0	Lyons (Berkeley, Calif.)	Alameda Co. League	18.9
Mainbourg (Garden Grove, Calif.)	Sunset League	21.0	Morlock (Northeast, Oklahoma City, Okla.)	State Regional	18.9
Vaughan (Compton, Calif.)	So. Counties Inv.	21.0	Prude (Compton, Calif.)	CIF Sp. Sec. Prelims.	18.9
440-Yard Dash			Renfro (Jefferson, Portland, Ore.)	State	18.9
Williams (Compton, Calif.)	State	47.2	Warfield (Warren, Ohio)	State	18.9
Hurte (Manual Arts, Los Angeles, Calif.)	L. A. City Meet	47.7	Nickolas (Vallejo, Calif.)	State Prelims.	19.0
Sadler (Castlemont, Oakland, Calif.)	Oakland Ath. League Finals	48.0	440-Yard Relay		
Webster (Kennett, Penna.)	State District	48.0	Andrews, Texas	State	41.5
Walker (Tustin, Calif.)	Chaffey Inv.	48.2	San Diego, California	South Bay Relays	42.0
Merritt (Andrews, Texas)	Kermitt Relays	48.3	Big Spring, Texas	Red Raider Relays	42.5
Tantorski (New Britain, Conn.)	State	48.3	Bowie, Texas	State	42.5
Buford (Chino, Calif.)	Tri-County League	48.4	Glenville, Cleveland, Ohio	West Tech Relays	42.6
Langham (Jefferson, Dallas, Texas)	State	48.4	Highland Park, Dallas, Texas	State	42.6
Bagley (Asbury Park, N. J.)	State	48.5	Hobbs, New Mexico	District	42.6
880-Yard Run			San Fernando, California	Poly Relays	42.7
Van Asten (Bonita, La Verne, Calif.)	State	1:51.9	Sunset, Dallas, Texas	Dallas Inv.	42.8
Underwood (Buena Park, Calif.)	Freeway League Finals	1:52.4	Vallejo, California	El Cerrito Relays	42.8
Rhodes (Abilene, Texas)	Blue Bonnet Relays	1:52.9	880-Yard Relay		
Ruble (Los Altos, Calif.)	W. Santa Clara Valley Leagues	1:53.1	Castlemont, Oakland, California	State Prelims.	1:26.0
Bess (La Habra, Calif.)	Compton Inv.	1:53.2	Fremont, Los Angeles, California	State Trials	1:26.9
Gunter (Jacksboro, Texas)	Brownwood Relays	1:54.0	Compton, California	Coast League	1:27.4
Whitney (Downey, Modesto, Calif.)	Golden West Inv.	1:54.4	Menlo, Atherton, California	West Coast Relays	1:27.4
Casto (Barrington, R. I.)	State	1:55.1	Jordan, Los Angeles, California	State Trials	1:27.6
Hargrave (Graham, Texas)	Brownwood Relays	1:55.2	Muir, Pasadena, California	CIF So. Sec. Semi-Finals	1:27.9
Turnquist (No. Hollywood, Calif.)	L. A. City Finals	1:55.3	Glenville, Cleveland, Ohio	West Tech Relays	1:28.3
Mile Run			Fontana, California	Citrus Belt League	1:28.7
Tucker (Polytechnic, San Francisco, Calif.)	State	4:14.3	Washington, Sioux Falls, South Dakota	Aberdeen Relays	1:28.7
Thomas (Uniontown, Penna.)	Mt. Lebanon Inv.	4:14.9	Hobbs, New Mexico	District	1:28.8
McCalla (Berkeley, Calif.)	N. Coast Finals	4:16.1	Vallejo, California	El Cerrito Relays	1:28.8
Kidd (Malvern, Ontario, Canada)	Ontario Fed. Meet	4:17.2	Mile Relay		
Bess (La Habra, Calif.)	CIF So. Sec. Finals	4:20.5	Andrews, Texas	Mustang Relays	3:15.2
Umbarger (Elkhart, Ind.)	State	4:20.5	Midland, Texas	Mustang Relays	3:17.4
Horn (Lancaster, Penna.)	State District	4:21.5	Glendale, California	State	3:18.9
Boore (Los Altos, Calif.)	W. Santa Clara Valley League	4:22.8	Lee, Baytown, Texas	State	3:19.0
Sederburg (Garinger, No. Car.)	State	4:23.0	Castlemont, Oakland, California	Martinez Relays	3:19.1
			Taecos, Amarillo, Texas	Mustang Relays	3:20.9
			Garland, Texas	No. Texas Relays	3:21.0
			Arlington Heights, Fort Worth, Texas	No. Texas Relays	3:21.1
			Compton, California	State Prelims.	3:22.6
			Glenville, Cleveland, Ohio	West Tech Relays	3:22.8

Compiled by WILLIAM W. RUSSELL

Mile Sprint Medley Relay

Polytechnic, Long Beach, California	Bellflower Relays	3:29.0
Lee, Baytown, Texas	Texas Relays	3:32.2
Wauwatosa, Wisconsin	State	3:34.3
Miramonte, Orinda, California	West Coast Relays	3:35.4
North Scott, Eldridge, Iowa	Drake Relays	3:36.9
Weber, Utah	State	3:37.0
Hewlett, New Rochelle, N. Y.	Intersectional	3:37.2
Iowa City, Iowa	State	3:39.1
Wichita East, Wichita, Kansas	Regional	3:39.1
Hutchinson, Kansas	State Meet	3:39.3
Shawnee Mission, Kansas	Regional	3:39.3

Field Events

Pole Vault

Guerra (Tempe, Ariz.)	Divisional	14-5
Graves (El Cajon, Calif.)	CIF So. Sec. Finals	14-0
Guynes (Grand Prairie, Texas)	State	13-7 $\frac{3}{4}$
Fortner (Hoover, Glendale, Calif.)	Foothill League	13-7 $\frac{1}{4}$
Mulkins (California, Whittier, Calif.)	Huntington Beach Relays	13-7
Morrow (Montgomery, Minn.)	State District	13-6 $\frac{3}{4}$
Evans (Boone, Fla.)	Florida Relays	13-6 $\frac{1}{4}$
Peacocke (West, Seattle, Wash.)	State	13-6 $\frac{1}{4}$
Seagren (Pomona, Calif.)	Bellflower Relays	13-6 $\frac{1}{4}$
Wood (El Segundo, Calif.)	Pioneer League	13-5 $\frac{3}{4}$

High Jump

Hicks (Coles, Corpus Christi, Texas)	Little Regional	6-7 $\frac{1}{2}$
Little (Fort Lauderdale, Fla.)	State	6-7
Huggins (Flathead Co., Kalispell, Mont.)	State	6-6 $\frac{1}{2}$
Bauman (Notre Dame, Sherman Oaks, Calif.)	Catholic League	6-6 $\frac{1}{4}$
Green (Oakland, Calif.)	State	6-6 $\frac{1}{4}$
Mohr (Maine, Park Ridge, Ill.)	State	6-6 $\frac{1}{4}$
Olsen (Willow Glenn, San Jose, Calif.)	State	6-6 $\frac{1}{4}$
Hopkins (Davenport, Iowa)	State Indoor	6-5 $\frac{1}{2}$
Caldwell (Fremont, Los Angeles, Calif.)	L. A. City Finals	6-5 $\frac{1}{4}$
Llewellyn (San Mateo, Calif.)	State	6-5 $\frac{1}{4}$
Stewart (Santa Paula, Calif.)	CIF So. Sec. Finals	6-5 $\frac{1}{4}$
Watkins (Modesto, Calif.)	State	6-5 $\frac{1}{4}$

Broad Jump

Roberts (Compton, Calif.)	CIF So. Sec. Prelims.	24-6 $\frac{1}{2}$
Pirie (Glendale, Calif.)	Glendale Relays	24-3 $\frac{3}{4}$
Renfro (Jefferson, Portland, Ore.)	State	24-1 $\frac{1}{2}$

Gaston (Wasco, Calif.)	So. Sequoia League	23-11 $\frac{1}{2}$
Rheams (Lompoc, Calif.)	CIF So. Sec. Finals	23-11 $\frac{1}{4}$
Johnson (Chaffey, Ontario, Calif.)	CIF So. Sec. Finals	23-11
King (San Diego, Calif.)	CIF So. Sec. Finals	23-10 $\frac{3}{4}$
Love (E. Tech., Cleveland, Ohio)	State	23-9 $\frac{1}{2}$
Williams (Brawley, Calif.)	CIF So. Sec. Finals	23-9 $\frac{1}{4}$
Foster (Sunset, Dallas, Texas)	State	23-9
Warfield (Warren, Ohio)	Muskingum Relays	23-9

Shot Put

Inman (Belton, Texas)	State	62-8 $\frac{1}{2}$
Young (Brownwood, Texas)	State	62-3
Kelso (Bellflower, Calif.)	CIF So. Sec. Semi-Finals	61-4 $\frac{1}{4}$
Baggett (Berkeley, Calif.)	No. Coast Finals	60-11 $\frac{1}{2}$
Hart (Morrisville, Penna.)	State District	60-10 $\frac{1}{4}$
Wynn (Lakewood, Calif.)	Bellflower Relays	60-10
Mettleton (Atascadero, Calif.)	CIF So. Sec. Finals	60-8 $\frac{3}{4}$
Roberts (Cleveland, Texas)	State	60-6 $\frac{1}{4}$
Arch (Reno, Nev.)	State	60-1 $\frac{1}{2}$
Merlo (San Mateo, Calif.)	State	59-11 $\frac{3}{4}$

Discus

Darnes (Polytechnic, San Francisco, Calif.)	State	178-8
Schoenwatter (Fremont, Sunnyvale, Calif.)	W. Santa Clara Valley League	175-5
Schmidt (King City, Calif.)	State	175-2
McCleary (Cornwall, Penna.)	State District	174-7 $\frac{1}{2}$
Hendrickson (West, Green Bay, Wisc.)	State	174-2
Stephens (Mayville, Okla.)	E. Central College Inv.	173-3 $\frac{1}{2}$
Young (Brownwood, Texas)	Brady Relays	173-1
Rease (Valley Stream, N. Y.)	Sectional	172-4
Miles (Reno, Nev.)	State	172-0
Silvester (Bear River, Utah)	State	170-4 $\frac{1}{2}$

Javelin

Red (Lafayette, La.)	Meet of Champions	211-3 $\frac{1}{2}$
Silven (Cranston, R. I.)	State	207-8 $\frac{1}{2}$
Hamic (Crowley, La.)	State	207-6 $\frac{1}{2}$
Barkas (Hanover Park, N. J.)	Newark Meet	207-3 $\frac{1}{2}$
Stanfield (Hutchinson, Kans.)	K. U. Relays	206-5
Christison (Flathead Co., Kalispell, Mont.)	State	203-8 $\frac{1}{2}$
Reynolds (Interboro, Penna.)	State District	202-9
Bowser (Butler, Penna.)	State District	200-11 $\frac{1}{2}$
Walker (Mount Lebanon, Penna.)	State District	200-6 $\frac{1}{2}$
Guntulis (Bulkeley, Hartford, Conn.)	State	196-4
Nobles (Jordan, Columbus, Ga.)	State	196-1 $\frac{1}{2}$

Fifteenth Annual

Report on High School Track

SOMEWHAT of a milestone is reached in the case of this study in that it is the fifteenth time we have prepared an annual report. When the first report was prepared for the February 1947 issue (based on the state track

meets held in the spring of 1946), we decided to run it along the lines of a national track meet. In the true sense of the word, a national meet could not be held because of widely varying track conditions as well as weather. We point-

ed this fact out in the first write-up and have reiterated it each subsequent year. However, in order to heighten interest, points were awarded for six places on a 10-8-6-4-3-2-1 basis. The state having the best performance is indicated with a colored block. When there was a tie for the best time or distance, a diagonal (Continued on page 47)

Summary Appears on Pages 40 and 41

for January, 1961

Track in the High Schools

STATE	120 HURDLES	100 DASH	MILE	880 RELAY	440	180 LOWS	880	220 DASH	MILE RELAY	POLE	SHOT	HIGH	DISCUS	BROAD	JAVELIN (a)	TOTAL
ALA.	★ 14.8	10.1	★ 4:31.1		50.2	★ 20.0	2:01.8	22.4	3:30.8	★ 1 13-1½	★ 52-3½	6-1	143-7½	22-2¼		1 (27)
ARIZ.	15.2	10.2	★ 4:25.4	1:30.6	50.3	20.0	★ 1:57.2	22.2		13-2½	53-8	6-2	166-4½	23-2½		2 (22)
ARK.	★ 15.0	10.1	4:37.1	1:31.6	50.6	19.5	2:00.7	22.4	3:30.6	★ 12-7½	51-1½	★ 6-3	153-2	21-5½		
CALIF.	★ 13.9	9.7				★	★			13-3	60-7	6-6¼	★	23-7¼		110 (1)
COLO.	★ 14.5	★ 9.7	4:33.6	1:31.5	★ 48.7	★ 19.3	1:59.6	★ 1½ 21.2	★ 3:26.3	12-9	55-1½	6-2	146-4½	21-11		8½ (14)
CONN.	15.1	10.1	4:24.6	1:31.4	★ 48.3	20.0	1:57.1	21.9		11-0	★ 56-1	6-0½	160-8	21-8½	196-4	9 (13)
DEL.	No State Meet															
D. C.	★ 14.3	10.0	4:39.4		50.3	★ 19.7	1:58.8	22.4	3:24.9	11-0	51-9	6-1½	139-10	★ 23-8		5 (19)
FLA.	★	9.9	4:32.1	★ 1:29.5	★ 49.3	★ 19.4	★ 1:57.9	22.1	★ 3:24.2	★ 13-4½	★ 55-10½		161-7½	★ 23-0½		31 (4)
GA.	14.9	10.0	4:34.4		★ 51.6	20.4	2:02.3	22.5	★ 3:28.2	12-7	55-5	6-0¼	★ 166-10½	21-10¼	★ 196-1½	
HAWAII		10.2	4:43.2	★ 1:32.6	★ 52.2					11-6			★ 145-10½	★ 21-6¼		
IDAHO	15.15	10.4	4:31.3	1:32.9	50.3	20.85	2:02.0	22.05	3:35.5	12-9	53-8¼	5-11½	157-0½	21-4¼		
ILL.	15.1	10.4	4:38.2	1:32.7	50.7	20.4	2:01.0	23.4	3:30.4	★ 13-0½	★ 58-5¼	6-2	162-10	22-10		
IND.	★ 15.0	9.9	4:20.5	1:30.7	★ 48.9	19.3	★ 1:56.5	21.8	★ 3:23.4	12-6½	55-5¼	6-4		21-7½		14 (8)
IOWA	★ 14.3	9.8	4:29.6	1:30.3	★ 49.0	20.0	2:01.2	22.1	3:26.7	12-4¼	58-0	★ 6-3½	159-1	22-10½		1½ (25)
KANS.	14.6	10.0	4:28.4	1:30.4	★ 50.4	19.5	1:56.9	21.7	★ 3:24.2	12-7	54-7¼	6-4½	158-8½	23-4¼	202-3	3 (21)
KY.	15.4	10.0	4:34.3	1:31.3	50.2	21.0	2:02.8	22.7	3:30.6	11-3	51-0¼	5-11	148-2	21-10½		
LA.	★ 14.6	10.0	4:31.1	1:30.5	49.5	★ 19.4	2:01.7	21.6	3:27.0	12-6	53-9	★ 6-4	★ 156-2½	22-5¼	207-6½	
MAINE	★ 15.1	10.1	4:29.2	★ 1:32.3	52.4	★ 19.8	2:00.0	★ 22.0		11-2	51-7¼	5-9¼	148-0½	21-8½	★ 192-1	
MD.	15.1	10.1	4:38.7	1:33.8	51.8	20.8	2:05.4	22.1	3:33.7	11-9¼	★ 50-11½	5-10	144-3	20-4		
MASS.	15.2	10.1	4:30.0	1:31.0	49.7	★ 19.4	2:00.0	21.4		11-2¼	54-4¼	6-1	145-10½	21-3¼	172-9	
MICH.	★ 14.5	★ 9.8	4:33.4	1:32.8	51.4	19.0	1:59.4	21.3		12-9½	★ 59-5¼	★ 6-4½		23-7½		7½ (16)
MO.	14.7	10.0	4:26.5	1:30.1	48.9	19.5	1:58.4	21.5	3:26.0	12-5¼	54-2¼	★ 6-5	151-1	★		



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(Continued from page 12)

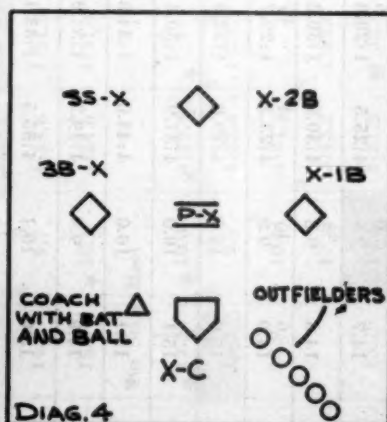
first. The first baseman charges the plate. The catcher comes forward. If it is worked properly, the play should be to third base and then possibly to first base.

The same gymnasium set-up can be used to teach defense against the squeeze play, and also defense against the double steal.

Our multiple situations drill is shown in Diagram 4. This is a very effective culminating drill, and it can be used by the coach to evaluate all the time and effort that have been spent in the previous practice sessions. It will also show any need for further instruction and practice by individuals or the team as a whole. The same basic infield set-up is used. We have the outfielders form a single line behind home plate and they are designated as the base-runners. The coach stands in the batter's box and holds a fungo bat and a ball. As the catcher receives the ball from the pitcher, the coach makes a play by hitting a ground ball to the infield. When the coach hits the ball, the outfielder who is first in line tries to run out the hit and make it safely to first base. If he is successful, he becomes the base-runner.

As this drill is practiced, many game situations will develop and the infield will have ample opportunity to practice their play-making ability while the pitcher can practice holding men on base while they attempt to steal. For safety's sake, the catcher should be cautioned not to attempt any throws to bases unless the coach instructs him to do so in order to avoid two baseballs in play in the infield at the same time.

These drills are but a fraction of the inexhaustible possibilities a baseball coach may employ if he desires to use the gymnasium as a training camp for varsity baseball.



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Event	Time	Place	Date	Event	Time	Place	Date
100-Yd. Dash	9.3	Fresno, Calif.	8/ 9/50	800-Relay	1:22.7	Texas Relays	4/ 4/57
100-Yd. Dash	9.3	Fresno, Calif.	5/15/48	440-Relay	28.9	Kansas Relays	4/26/57
100-Yd. Dash	9.3	Evanston, Ill.	8/14/55	440-Relay	28.9	W. C. Relays	5/11/57
100-Yd. Dash	9.3	Fresno, Calif.	5/12/56	100-Meter Dash	16.1	Walnut Sts., Calif.	8/12/50
100-Yd. Dash	9.3	Durham, N. C.	8/ 3/55	100-Meter Dash	16.3	U.S.A.-U.S.S.R.	7/19/59
100-Yd. Dash	9.3	Texas Relays	4/ 3/57	100-Meter Dash	16.3	Pan. Am. Games	8/25/59
100-Yd. Dash	9.3	San Jose, Calif.	4/ 2/59	100-Meter Dash	16.2	Rome, Italy	8/1/59
100-Yd. Dash	9.4	Arlene, Tex.	4/27/57	100-Meter Dash	16.1	Houston, Texas	8/19/59
220-Yd. Dash	26.9	San Jose, Calif.	8/ 9/56	100-Meter Dash	16.9	Canada	1960
220-Yd. Dash	26.3	Los Angeles	8/ 7/49	200-Meter Dash	30.5	Palo Alto, Calif.	7/ 2/59
220-Yd. Dash	26.1	San Jose, Calif.	1960	(turn)			
440-Yd. Run	48.2	Salt Lake City	8/21/47	200-Meter Dash	29.6	Pan. Am. Games	8/31/59
440-Yd. Run	48.9	Berkeley, Calif.	8/ 5/48	200-Meter Dash	29.7	U.S.A.-U.S.S.R.	7/20/59
440-Yd. Run	48.8	Modesto, Calif.	8/26/58	400-Meter H.	55.5	U.S.A.-U.S.S.R.	7/20/59
155-Yd. H.H.	13.5	Fresno, Calif.	5/15/58	400-Meter H.	49.5	Rome, Italy	8/2/59
220-Yd. L.H.	22.2	Durham, N. C.	8/ 3/58	200-Meter L.H.	32.5	Bern, Switzerland	8/21/59
220-Yd. L.H.	22.3	Salt Lake City	8/21/47	400-Meter Dash	44.9	Rome, Italy	8/1/59
400-Meter H.	48.5	Los Angeles	6/29/56	400-Meter Dash	44.7	Cologne, Germany	1959
110-Meter H.	13.2	Bern, Switzerland	8/21/59	1600-Meter R.	3:02.2	Rome, Italy	8/1/59
110-Meter H.	13.4	Bakersfield, Calif.	6/22/56	100-Meter (women)	11.9	Rome, Italy	8/2/59
800-Yd. Run	1:46.9	L. A. Relays	8/24/57	200-Meter (women)	24.9	Rome, Italy	8/5/59
2-M Relay	7:22.7	L. A. Relays	8/24/57				

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Pole Vaulters

(Continued from page 10)

while his hands and the pole pass his chest. Then he should kick his right leg toward the top of the pole. As the pull ends, the vaulter should bring the pole into his neck and right shoulder, and extend his arms down the pole.

The backward roll as shown in Series I is another fine exercise. The vaulter should push up into a handstand, pushing his body up and off the mat. Then he should drop his feet to the mat. Walking on the hands is a must for vaulters.

The cartwheel over the crossbar is shown in Series J. This is an excellent exercise and one that the boys like.

Pole vaulters should also use sit-ups with weights, presses, curls, etc. Emphasis should be placed on speed. The amount of weight used should be in proportion to the part of the body being exercised. Generally, the exercises should be in sets of three or four with about eight repetitions to a set. If a vaulter is able to do 10 to 15 repetitions, the weight being used is too light. Running up stairs develops leg power and endurance. A vaulter should alternate hitting all steps, then skipping two or three.

Outdoor Vaulting Drills

1. Place one or two extra vaulting boxes near the vaulting area. Have the vaulters practice pole plants while waiting for a turn to vault.

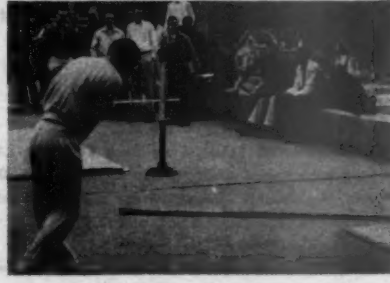
2. A good drill when a vaulter is getting lazy and not working hard and fast on the pole is to have him use a short run and a low grip on the pole. See how far above his hand hold he can clear.

3. Vaulters should spend some time running the hurdles in order to develop a uniform stride. We feel that a uniform stride is a very definite must.

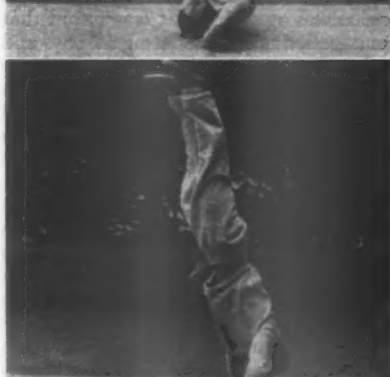
4. They should spend at least one-third of their practice time running the sprints, 220's, and 440's at near top speed, working for relaxation, even striding, and endurance.

5. Once or twice a week a vaulter should work out with the weight events. This change of pace will help develop overall strength and coordination while adding variety to the workouts.

6. High school vaulters should vault four days a week in the early season. About one-third of the practice time should be spent on purposeful vault-



Series H



Series I (Left)

ing. Vaulting should stop when the vaulter is too fatigued to vault correctly.

7. Run a lap with a vaulting pole to end the day's workout.

Outdoor Exercises for Vaulters

1. Place a chinning bar near the vaulting area for chinning, swinging, and other stunts.

2. Hang a rope from the goal posts and have the vaulters practice rope vaulting, working on the explosive pull, and kicking for the top of the goal as shown in Series B.

3. During the fall vaulters should run cross-country to develop endurance in their legs.

4. Walking on the hands and other balancing stunts should be used.

5. All types of exercises which promote flexibility, coordination, strength, and power are good. Speed should be stressed in most exercises.

Series J (Right)



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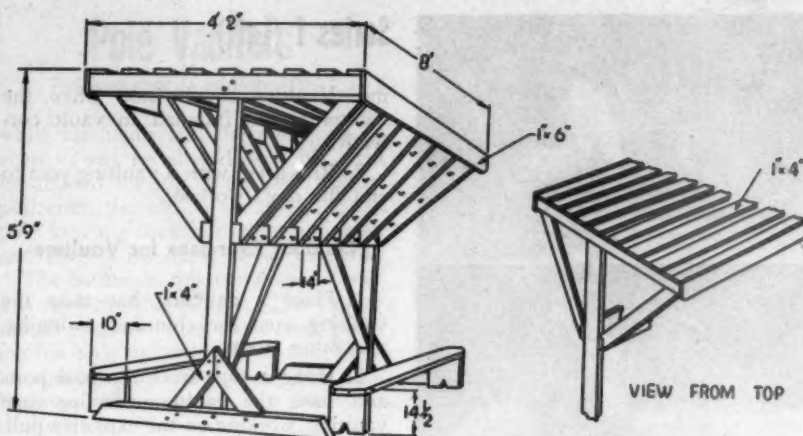
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Hay Feeder Storage

By JOHN R. JOHNSON

Football Coach, Angola, Indiana, High School

ADEQUATE storage space for football equipment has been a problem to many coaches for a long time.

When football was started in Angola three years ago, the seventh, eighth, and ninth grade boys participated. Then each year a new class was added. The 1960 season was our first with the seniors and a varsity schedule.

Two years ago new dressing rooms, with a large varsity dressing room measuring 70 feet by 20 feet, a junior varsity dressing room measuring 42 feet by 24 feet, and several additional rooms such as showers, coaches' room, training, and storage rooms were ready for use. At that time we tried to estimate the number of boys for whom storage space would be necessary when the seventh through the twelfth grades would be involved. We finally decided there would be approximately 65 high school boys and 65 junior high school boys out for football.

Dressing space, an arrangement for the supervision of dressing rooms, racks so that equipment would dry overnight, provision for inspection of equipment while hanging, and distance enough from the shower room so that no boy's street clothes would get wet were desired.

A schematic drawing was presented to the athletic director and the administration. It met with general approval and

several suggestions for improvement were incorporated. The administration contacted a local lumber yard, and a price was agreed on. It was found that one section accommodating 12 boys and a bench for each side could be built for \$50. When we compared this price with the price of metal lockers, it seemed very reasonable. An order for eleven sections was given and construction was started.

This rack is designed so that if a boy decides to chin himself it will not tip over. The first night of practice the boys are shown how to hang their equipment and then nothing more is said. On the whole the boys have cooperated in keeping equipment off the floor. If we do find equipment out of place, the offender is assigned two laps around the track in order to get his gear back. We never have any damp or wet equipment the day following practice even in extremely humid weather. Consequently,



Graduating from Indiana State Teachers College, John Johnson coached at three other Indiana high schools before moving to Angola. His coaching experience includes activity in basketball, baseball, and track as well as football.

very little damage occurs to cause added expense, to say nothing of a lack of foul odors and the pleasantness of putting on dry pads. We have 96 boys in our large locker room and 36 boys in the smaller room. Our varsity will use the smaller room next year and all of the younger boys will be in the larger room.

This type locker storage may not answer all problems, but it certainly has answered ours. If additional information is desired, we will be more than happy to answer any questions. The accompanying drawing with complete dimensions will be of assistance to anyone wanting to build this type of storage. Incidentally, the name was coined by our superintendent upon seeing the racks for the first time.

High School Track

(Continued from page 39)

colored block was used. A state's total number of points is indicated, while at the same time its rank is shown in parenthesis in color. A new state record is indicated by a star. All statistics are based on the state meets for the spring of 1960.

California Sets Record

On only two occasions has California failed to finish first and both times Texas took over the top rung. Twice previously California scored 106 points, but the total of 110 this year is an all-time high. After barely edging second place Texas for the preceding two years by $3\frac{1}{2}$ and $6\frac{1}{2}$ points, California again piled up a comfortable margin of 60 points over the second place team. This figure compares with the same margin over second place Illinois in the 1957 meet and the high of 61 points over Louisiana in the 1958 meet. California, in piling up the record 110 points, scored in every event, and has now scored in 168 out of the 188 events in which the state has competed.

Nineteen sixty could be classed as the year of the big upheaval because such steady performers as Illinois and Pennsylvania failed to score a point, and two other track stalwarts, Kansas and New Jersey, failed to make the top ten, although the latter only missed by one place. Wisconsin is new to the select group which now comprises 25 states. The number of times each has been among the first ten is indicated in the following table.

Indiana moved into a tie for fifth place with Pennsylvania, while Oregon moved into a tie for tenth place. For the four previous meets Indiana failed

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to register among the ten leaders.

In addition to the totals on the all-time list, the relative position of the states at the end of each five-year period is shown. Washington improved 3 places for each interval, while Louisiana moved up a total of 10 places. Ari-

State	No. of Years	State	No. of Years
California	15	Missouri	3
Texas	15	Louisiana	3
Ohio	14	Florida	2
Illinois	11	Massachusetts	2
Indiana	10	New Mexico	2
Pennsylvania	10	Oklahoma	2
New York	9	Colorado	1
New Jersey	7	Connecticut	1
Washington	7	Tennessee	1
Kansas	6	Utah	1
Oregon	6	Virginia	1
Arizona	5	Wisconsin	1
Michigan	3		

zona, Florida, and New Mexico all have made big strides. New Mexico picked up 51 points in the last five meets. Wisconsin, Colorado, and Iowa have dropped 11, 8, and 7 places respectively from their standings of ten years ago. New York continues to gain ground at a rapid rate. Not only has New York moved into a strong fifth place position, but the margin separating it from Illinois has been reduced to 30 points, compared with the 48 point spread of five years ago, and 77 points by which

New York trailed ten years ago.

One of the interesting aspects of a study of this nature is to be found in the manner in which states of a locality will be grouped together. For example, Ohio, Indiana, and Illinois are 3, 6, and 4 respectively, while the Middle Atlantic states of New York, New Jersey, and Pennsylvania hold the 5th, 7th, and 8th spots. The two Pacific Northwest states of Washington and Oregon are 9th and 10th. At the same time the states of Kansas, Oklahoma, Iowa, and Missouri will be found grouped 11th, 12th, 13th, and 16th in the standings. The three northern New England states of Maine, New Hampshire, and Vermont have failed to score. South Carolina is also scoreless as are the two new states of Alaska and Hawaii, while Delaware does not hold a state meet.

State	Total	(1951 rank)	(1956 rank)
1.) Calif.	1287	(1)	(1)
2. Texas	731	(2)	(2)
3. Ohio	447	(3)	(3)
4. Ill.	343	(4)	(4)
5. N. Y.	313	(7)	(6)
6. Ind.	287	(5)	(5)
7. N. J.	249	(9)	(7)
8. Penna.	238	(10)	(8)
9. Wash.	200	(15)	(12)
10. Ore.	181	(13)	(13)

11. Kans.	180	(16)	(11)
12. Okla.	175	(14)	(10)
13. Iowa	174	(6)	(9)
14. Ariz.	146	(23)	(18)
15. La.	127	(25)	(20)
16. Mo.	124	(11)	(15)
17. Mass.	110	(18)	(16)
18. Mich.	108	(20)	(19)
19. Wisc.	103	(8)	(14)
20. Colo.	89	(12)	(17)
21. Conn.	75	(19)	(21)
22. Fla.	72	(31)	(25)
23. N. Mex.	63		(31)
24. Utah	56	(23)	(23)
25. Va.	52	(17)	(22)
26. Minn.	43	(26)	(25)
27. Nebr.	39	(21)	(24)
28. Mont.	33	(28)	(27)
29. N. Dak.	30	(30)	(28)
30. D. C.	28	(28)	(32)
31. Ida.	20	(22)	(29)
32. W. Va.	18	(29)	(35)
33. Nev.	17		
34. Tenn.	15		(29)
35. N. Car.	14		(32)
36. R. I.	12		
37. Ark.	9		(35)
38. Md.	9		
39. Ky.	8	(26)	(32)
40. S. Dak.	7	(32)	(35)
41. Ala.	5		(39)
42. Ga.	5	(34)	(38)
43. Miss.	1	(33)	(40)
44. Wyo.	1/3		

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Sectional Averages

Each year, beginning with the second annual report, we have presented a further comparison by grouping the states into the nine generally accepted regions and averaging their point totals. In the accompanying table the averages for each of the five-year periods are shown along with the averages for the current study.

Section	1961	'47-'51	'52-'56	'57-'61
Pacific	39.1	30.8	36.5	39.1
Mid. Atlantic	13.5	15.6	19.7	16.2
W. So. Cent.	12.9	14.9	26.2	19.8
E. No. Cent.	12.3	24.5	13.7	13.1
Mountain	05.8	02.7	03.0	40.9
S. Atlantic	05.4	01.5	01.4	02.5
New England	02.5	03.4	02.6	02.6
W. No. Cent.	01.2	06.5	05.3	04.8
E. So. Cent.	00.2	00.7	00.8	00.1

In figuring the averages for the Pacific Coast states, the new state of Hawaii was included. Twice the Pacific Coast exceeded the 39.1 average of this year, the highest being a 43.3 average in 1958. Of course, at that time only the three states bordering the Pacific Ocean were included. The average for the Pacific states for this year figured on the same basis would be a spectacular 52.1. Even with Hawaii being included the last two years, the Pacific states have continued to increase faster than any other section. Instead of other areas catching up, the Pacific Coast is becoming even more the capital of high school track. That the track pendulum is swinging farther to the west is further evidenced by the slow but steady improvement being made by the Mountain section. The West South Central section was hurt by the failure of Louisiana and Oklahoma (two usually dependable point getters) to garner more than 1.5 points.

Only once has the Pacific region failed to carry the banner and in that instance the East North Central led the parade. The Middle Atlantic region strengthened its hold on the runner-up honors and now has finished second six times. The West South Central region has been second four times and the East North Central section has been runner-up three times.

It is obvious to even the casual observer that the four sections Pacific, Middle Atlantic, East North Central, and West South Central dominate the high school track picture. However, the 16 states comprising these four sections do not hold as commanding a position as formerly and the trend is for an even smaller portion of the total number of points. For the first five years the states in these four sections accounted for 85.0 per cent of all the points. The next five years saw the per-



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Dept. 24

centage increase to 88.0 per cent. The average for the last five years shows a drop to 77.0 per cent, with the figure for the past year an even lower 73.1 per cent.

The West North Central section had its poorest showing of any of the previous studies, while the South Atlantic turned in a record sectional average. The failure of Pennsylvania and Illinois to score hurt both of their sections.

In addition to the first ten teams in the all-time list, the other six states comprising the four leading sections are Oklahoma in 12th place, Louisiana 15th, Michigan 18th, Wisconsin 19th, Arkansas 37th, and Hawaii which has failed to score.

More New Records

In the 49 state meets, 161 new records were set and this figure far surpasses any previous year — the previous high being the 150 new records set in the 1958 meets.

For the last few years a little better than a third of the new records were made in the five field events. The high jump and 180 lows each had 16 new marks entered on the books, while for the two sprints a combined total of 12 new records was set. Classed by many

as a speed event, the broad jump also trailed in the matter of new records. The javelin was not considered either in the study proper or in regard to new records because only 17 states compete in this event.

Florida led the onslaught on records with 11. Eight of these were in the running events which speaks well for the University of Florida's new all-weather track. Rhode Island set 8 new records, while Maine and Wisconsin each came up with 17 new entries on the record board.

It is getting tougher and tougher for a state to score points as the schoolboys

continue to set new records and improve performances. The accompanying table shows the number of performances in this year's meet equal to or better than the sixth place finish of ten and five years ago.

In the case of the 220-yard dash, the sixth place time for both 1951 and 1956 was 21.5 hence the reason for the same figure when compared against this year's meet.

It has been customary to average out the performances and compare them with previous years. This year we are comparing the current performances

Event	No. better than 1951	No. better than 1956
120 H. H.	18	11
100 Dash	17	10
100 Mile Run	13	9
880 Relay	17	11
440-Yd.	22	16
180 L. H.	27	19
880-Yd.	20	7
220-Yd.	10	10
Mile Relay	28	10
Pole	30	10
Shot	21	8
H. J.	28	15
Discus	20	11
B. J.		

Event	'47-'56	'57-'60	1961
120 H.H.	15.28	14.99	14.92
100	10.17	10.05	10.10
Mile	4:38.11	4:32.97	4:32.01
880 Relay	1:36.64	1:31.98	1:32.04
440-Yd.	51.86	50.10	50.14
880-Yd.	2:02.20	2:00.53	1:59.73
180 L.H.*		20.11	19.90
220-Yd.	22.50	22.17	22.01
Mile Relay**		3:29.43	3:27.89
Pole Vault	11-6¼	12-1	12-2½
Shot	49-6	53-8	54-6
H. J.	5-10	6-0¾	6-1½
Discus	142-8½	152-6	156-0
B. J.	21-5	21-10	22-2½

*In the early years of the study, the 180-yard low hurdles were not the accepted distance for this event.

**The mile relay was included for the first time in 1956.

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with the average for the first ten years (1947-56) and the second four years (1957-1960).

It will be noted that every event with the exception of the 100-yard dash was better than the previous four-year average. Previously, we pointed out that only four new records were set in the 220-yard dash; however, it is interesting that the average time showed better than a tenth of a second improvement. The shot put and discus continue to improve at an almost unbelievable rate, the latter averaging $3\frac{1}{2}$ feet farther than the previous four-year average.

National Honor Roll

Each year in connection with this report on high school track we present the National Honor Roll as selected by Bill Russell of the California Interscholastic Federation for the *National Federation High School Track and Field Guide*.

Of the 176 listings California accounted for 76 which is the all-time high, the previous mark being 73 on the 1954 Honor Roll. Texas with 36 listings could not match its previous high of 45 set a year ago, and thus California's margin over the second place state was 40 after being reduced to 13 a year ago.

The domination of the four leading track sections continues over into the Honor Roll, with 84 per cent of the listings being from 16 states found in the Pacific Coast, Middle Atlantic, East North Central, and West South Central sections. This percentage remains fairly constant, having been 87 per cent for the 1955 Honor Roll, 86 per cent for 1956, 80 per cent for 1957, 85 per cent for 1958, 80 per cent for two years ago, and 84 per cent for last year. As a matter of fact, just under two-thirds of all the listings are from California and Texas, 63.6 per cent to be specific.

The state meets continue to be the most frequent source of meritorious marks with a third of the Honor Roll performances having been made in the state finals. This year the state finals were seriously threatened by the preliminaries, regionals, and sectionals with 26.1 per cent of the marks being made in these meets. Five of the performances in the Los Angeles City Meet warranted mention, while the Southern Sectional preliminaries and finals of the California Interscholastic Federation accounted for 14 entries. The mile relay at the Mustang Relays in Texas must have been something to see with 3 of the 6 best marks in the country being made at that meet. We also welcome to the Honor Roll our first entry from north of the border, Kidd from Malvern, Ontario for his 4:17.2 time in the mile run.



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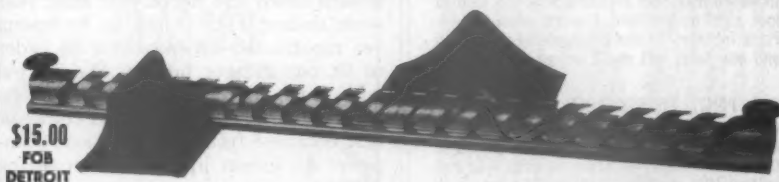
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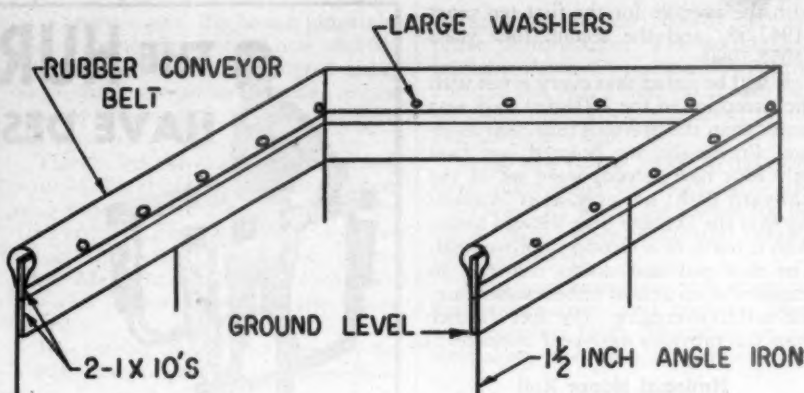
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Portable Jumping Pits

By **THOMAS A. SMITH**
Track Coach, Glendale, Arizona, High School

It is often exasperating to a track coach on arriving for practice after school to see that the straw bales or sand bags that he used for jumping pits have been broken and their contents strewn all over the field. This used to happen quite often at Glendale Union High School. Either the pits collapsed from wear and tear, or were torn apart by neighborhood children who would come in on weekends or after practice. We had quite a problem until one of our maintenance men suggested a solution.

Some portable pits that could be broken down and stored year after year were desired. These had to be strong yet constructed inexpensively in order to fit our meager budget. We started with some 1 by 10's, angle iron, a few bolts and washers, and an old conveyor belt obtained from a local gravel company. As shown in the accompanying diagram, an open box was constructed so that the sides were 20 inches high, open in the front, and fastened together with angle iron. This angle iron was fastened so that a foot to a foot and a half extended into the ground to serve as an anchor for the pit.

We were concerned about the possibility of a boy landing on the board top and sustaining a serious injury. This hazard was eliminated by the use of the conveyor belt. A used rubber belt was bent over the top of the 1 by 10 boards

so that there was a 3- to 4-inch space between the board and the rubber semi-circle. Then it was bolted to the sides of the box with large washers to keep it firm. The belt is stiff yet it will give enough to afford a soft landing if a jumper happens to hit it. It is much softer than a bale of straw.

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The best feature of these portable jumping pits is that they can be broken down and stored for use year after year. It is no longer necessary to buy bales of straw or spend time filling bags with sawdust. These pits can be assembled in a matter of minutes.

Our physical education classes and three track teams have used these pits for a year and they show absolutely no wear. As an added feature, the pits, including the rubber belt, can be painted in school colors which will make the track meets more colorful.

Our only expense in constructing a high jump pit was the price of 80 feet of 1 by 10 lumber, some bolts, large washers, 21 feet of 1½ inch angle iron, and 40 feet of old conveyor belt. The cost of this material was less than the 28 bales of straw that we used to buy every year for our pit.

Combination Offense

(Continued from page 36)

O2 becomes the front line feeder. Then O5 swings up to the high post and is in position to receive a pass from O4. O3 clears out of the middle and sets up the low post behind O5. The high and low post are now our tandem pivot alignments.

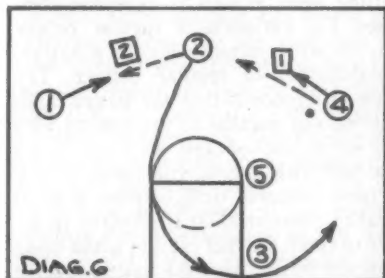
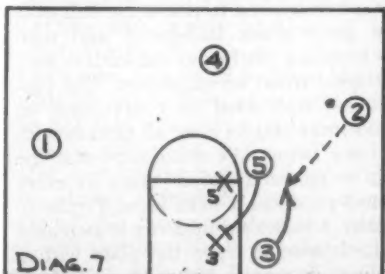


Diagram 6 shows the continuation of the moves with O4 passing the ball to the center feeder, O2, who in turn feeds down the opposite side to O1. Then O2 cuts for the basket and O4 becomes the center feeder. If O2 opens up and tries for the basket, O5 is ready to roll to the front of the basket for follow-up rebounding or an outlet pass. O3 turns to



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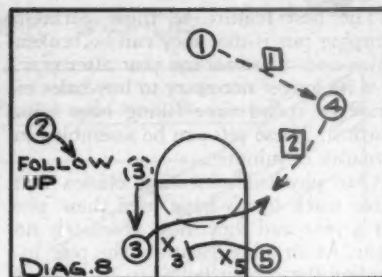
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follow up on the right side of the board.

The screen set-up that is used when the tandem post has been established is shown in Diagram 7.

Diagram 8 shows the horizontal screening that O3 and O5 can employ to get free for the close-in shot.

As is true in most offensive formations, there are many, many variations from the basic patterns which may be employed. We have described the essentials of this versatile offense, the 1-3-1, and how it can be adapted for use against both the man-for-man and the zone defenses.

Teaching Batting

(Continued from page 35)

Pepper drills conducted during the early training season are considered hitting drills as well as loosening exercises. For variation of regular pepper we use wrist pepper which is a natural continuation of regular pepper. The only difference is that the batter holds the bat out parallel to the ground with his wrists cocked and attempts to hit the ball with only a wrist snap. This is a most valuable drill because a great deal of concentration is required in order to meet the ball cleanly while using only the wrists. Also, the batters observe the extra power which can be generated by good wrist action.

No batter will become a good hitter unless he practices hitting; therefore, as much batting practice as possible must be provided for each player early in the season. The squad is divided into three groups for early season batting practice. Each group has five players — one batter, one foul ball chaser, a pitcher, and two fielders. The pitchers are instructed to throw the ball over the plate about half-speed and with no breaking pitches so the batters may get good wood on all swings. The batters are instructed to concentrate on good form and to meet all pitches with an easy swing. We make sure that the last swing each player takes in every round produces a solid blow. Psychologically, a batter's confidence is increased if he is able to leave the plate with a feeling of success rather than failure.

By using this type of batting practice, all players get several rounds of hitting and may concentrate on developing correct batting habits against pitched balls without the distraction of fast balls and curves.

The final batting drill used in pre-season training is called *outfielders versus infielders*. In this drill the outfielders are on one team and the infielders on the other. One team bats while the other is scattered around the field and a pitcher is on the mound throwing full speed. Each batter is allowed one strike. If he misses it, takes it, fouls or does not get a solid blow he is out. If he hits solidly, he continues hitting until he does not. Each batter hits in an inning and then the sides are changed. The team that had the most hits is declared the winner. We believe this is an excellent drill because swinging at the first good pitch is encouraged and a friendly batting rivalry between the outfielders and infielders is stimulated.

Styles of the Yankees

(Continued from page 18)

often remarked: *Nobody can hit a ball farther than him, left-handed or right-handed either.*

The record book will support the contention that Mantle has had a remarkable career. His big year was in 1956 when he won the triple crown. He led the American League in batting with .353, in home runs with 52, and in runs batted in with 130. During his ten seasons in the big time, Mantle has averaged well over .300, and his 20 home runs in 1960 paced the league, boosting his lifetime mark to 320. His 1960 World Series performance was nothing short of brilliant. Although in a losing effort, Mickey walloped 3 homers, drove in 11 runs, and compiled a .400 batting average. Mantle's all-time World Series home run total is 14, only one behind Babe Ruth's all-time mark of 15.

Our illustrations (Series B) show Mantle's mighty swing in action. Mickey's good stride and powerful shoulders combine with his wrist action to give maximum impact. The illustrations accentuate the perfect rhythm of his swing. Waiting for the pitch, his body is bent over, in a coiled position. Mickey holds his hands down at the end, with the bat held straight up. Using a comfortable stance, he pushes off on his right foot, taking a fairly long stride. As Mickey's powerful swing comes around, his hips and shoulders swing around together. His level swing comes in contact with the ball well out in

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front of the plate. Mantle's right knee is bent close to the ground, but still dug in, giving him maximum power. A great follow-through enables him to generate tremendous power into his swing. He has everything going for him — hands, wrists, arms, shoulders, and hips — all put together into a perfectly synchronized hitting swing.

Toward the end of the 1960 season, Mantle's stick work was much more consistent and showed more power from the right side of the plate. As a youngster, Mickey was a right-handed batter exclusively. He confesses, *I was always a better righty than lefty.* However, whether he is batting right-handed or left-handed, Mantle's stance is almost identical. Will he abandon the switch next year and swing exclusively from the right-hand side of the plate? The great athlete had this to say: *If the pitchers promise to cooperate and not throw curves, I'll bat righty against right-handers.*

Bill Skowron. *The Moose*, which is what everybody calls Skowron, has a lifetime batting average of .303 for his seven major league seasons. The powerfully built athlete is rated the best overall hitter among all the first basemen. Skowron has had a tendency to come up with costly injuries, but when he is in good physical shape, he is as dangerous a hitter as there is in the big leagues. *The trouble is*, Bill says, *When I get hurt, it's no little two-day job. I'm always out for two or three weeks, and then, when I do get back, my timing is so far off I don't start hitting right for another couple of weeks.*

Skowron's most productive year in the major leagues was 1956 when he hit .308, slamming 23 homers, and driving 90 runs across the plate. He was a prime factor in the Yankees' surge to the pennant in 1960, hitting .309 and belting 26 home runs. He had a splendid World Series mark of .375, registering 12 safeties and two circuit clouts. Looking back at his past career, we see a record of consistency and production. As Bill puts it, *I've always hit.*

The illustrations of Skowron (Series C) show his feet close together, and as he prepares to swing, Bill's left heel is slightly off the ground, with his weight back on the rear foot. The bat is held straight up and his hands are at the end of the bat and quite high. As his hands and arms bring the bat back, Skowron's left knee bends, and the stride comes forward. These illustrations show an open stance as Bill steps toward the field to which he wants to hit the ball. Notice his perfectly level swing as his hips and shoulders come around together. With his arms straight out, he throws the bat out toward the

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ball. His weight is transferred from his rear foot up to the front foot. Although the big Yankee first baseman has power, he is not a sucker swinger. Opposing hurlers will quickly testify to this point.

Skowron has amazed fans with his ability to hit to the opposite field. He generates almost as much power to right field as he does to left. When asked if he advises young hitters to hit to all fields, he replied: *Yes, I would advise it because it really pays off. I used to pull everything until I found out that I could hit the ball to right field as far as I could to left field, and that's what I've been doing.* How does he hit those opposite field home runs? Bill answered: *Oh, I just look for a certain pitch, and if it's away, I hit it to right field. No use trying to pull it because I'll hit it into a double play.*

Throughout his major league career, Skowron has tried to adhere to four important hitting principles: 1. Swing only at strikes. 2. Don't be overanxious. 3. Try to get a comfortable stance. 4. Be ready at all times.

We have a strong feeling that Mr. Skowron has learned his lessons well.

Tony Kubek. The versatile Yankee shortstop has been a most consistent hitter since 1957 when he was voted the *Rookie of the Year*. He hit .297 during his freshman year, clouting two homers in one World Series game against the Braves. Tony hits to all fields, spraying most of his blows on a line. During his three seasons in the minors, Kubek never hit below .331. Just twenty-three years old, Tony is not a slugger, but the 1960 batting figures show 14 home runs, and he has had at least 21 doubles every season.

Swinging from the left side of the plate, Kubek holds his bat unusually high, well out, and back (Series D). He grips the bat at the end, with his wrists cocked. Tony uses a wide stance. As he prepares to swing, Kubek lifts his right foot, bending the leg at the knee. Striding forward, he hits the ball well out in front of the plate. His rear foot is dug in and remains stable throughout the swing. Tony's hips and shoulders are level, as both come around in a synchronized movement. Like all good hitters, he hits off a straight front leg. The level swing continues on through, with his powerful wrists rolling over upon contact with the ball.

From talking with this very likeable and clean-cut athlete, it becomes evident that Kubek has been a very devoted student of the art of hitting. Since his sandlot days in Milwaukee, he has incorporated into his swing batting theories from some of the great

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hitters in the game, including the fabulous Ted Williams. Tony stated: *I think the most fundamental principle of hitting is just keeping your eye on the ball and watching it. You should try to pick it up as soon as it leaves the pitcher's hand. In order to be consistent at the plate, you have to learn the strike zone and try to get a good strike to hit.*

Hitting down on the ball is a batting theory which Kubek learned from Williams. Tony commented: *On high pitches, above the waist, you swing down slightly, not really a chopping motion, but a slightly downward level swing. This way you produce more line drives, and you don't top as many balls, nor do you pop as many balls into the air.*

Kubek continued: *I think the main thing is to go up to the plate feeling relaxed, and don't try to copy any other player's style. Yes, there are certain things you must have — good eyesight and a good pair of wrists. But, you have to do a lot of hard work and get plenty of batting practice. Practicing is the main thing. He concluded with the two main requisites for becoming a good baseball player: first, play every chance you get, and second, keep in tiptop shape.*

Bobby Richardson. This great little glove man of the Yankees proved in the 1960 World Series that he is just as capable with the bat. The 5 foot, 9 inch mighty mite astounded the baseball world by establishing some of the most enviable batting records in the classic.


In the third game of the World Series, Bobby smashed a sharp line drive into the left field stands for a home run. His sizzling line single later in the contest drove across two more runs, making a grand total of 6 runs batted in, a record for a World Series game, erasing the names of Tony Lazzeri, Bill Dickey, Ted Kluszewski, and Mickey Mantle. His 12 runs batted in during the 1960 World Series was still another record. Although Bobby's season batting average showed only a .252 mark, he hit a healthy .367 in the Series.

Back in 1959, Richardson proved he could hit major league pitching. A late season surge gave him a .301 figure, the only Yankee to reach .300 that year. Furthermore, his minor league career average was well above .300. Although not a power hitter, Richardson is smart and improvises at the plate. He can hit well to right field. Whereas early in his

professional career he had a tendency to hit everything up the middle, his coaches taught him to hit to all fields. His home run hit down the left field line in the 1960 classic is evidence of this change.

Richardson uses a conventional stance with his feet spread. He holds his hands quite high, choking the bat slightly. The illustrations (Series E) show Bobby lifting his left front foot up on the stride. His arms are straight up on contact with the ball, with his wrists rolling over. Notice in the illustrations that his eyes follow the ball throughout the swing. His weight comes forward with the level swing, hitting off a straight front leg.

After his outstanding year in 1959 when he led the Yankees with a .301 batting average, we asked the personable Richardson how he accounted for his fine average. He replied: *I was in there every day. Usually, when I come up, I hear Mr. Stengel's voice saying, 'hold that gun,' which in plain language means you're being removed for a pinch hitter. In order to hit .300 in the major leagues, you have to be lucky to a certain extent — you have to have a lot of ground balls that will go through the infield — you need some*



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bloop hits — and, then, of course, you have to hit a few line drives.

Looking back at Richardson's performance in the 1960 series, Bobby's manager, Casey Stengel, must be given credit for giving the little second sacker the opportunity to chalk up his records. During the latter stages of the seven-game series, Casey remarked: *He's hitting good enough to keep me from bothering him.*

Track of the Future

(Continued from page 8)

The runways for all events are of the same rubber-asphalt surface with steel curbing. Our pole vault pit, 20 feet by 20 feet, is located in the center so that it can be approached from either direction with one run of 140 feet and the other 150 feet. It has 30-inch concrete retaining walls on the sides (Illustration 2). Two 20 by 8 foot running broad jump pits with concrete curbing are located at either end.

The shot put and discus circles for meets are placed on the same 20 by 10 foot concrete platform so that the men throw in opposite directions (Illustration 3). A 16-inch concrete wall, timber lined, is placed in an arc at 65 feet to stop the shot put. The toeboard is one of the new aluminum types that will not break or rust. It was necessary to construct a screen to the right of the discus circle to prevent wild throws from landing in the broad jump area. A similar concrete platform is located outside the infield for practice purposes.

Our high jump runways are two fan-shaped areas 40 feet long which permit full runs for most jumpers (Illustration 4). This pit is 20 by 12 feet with low concrete retaining walls. The javelin runway (of rubber-asphalt) is 60 feet long with the throwing area 13 feet wide and 40 feet long.

A Permanent Steeplechase Pit. Since the steeplechase has become so popular, we decided to build a permanent pit (Illustration 5). It is constructed of concrete with the surface of rubber-asphalt. The hurdle is of permanent construction. There is a drain in the bottom so that it can be readily emptied and cleaned. Track men find this an excellent place to swim following a hot

Illustration 4. The 20' x 12' high jump pit with two fan-shaped runways made of rubber-asphalt.



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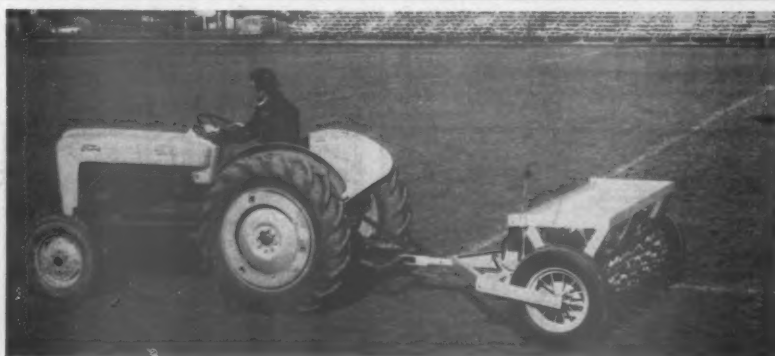
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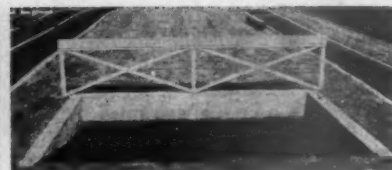


Illustration 5. Steeplechase water jump (not filled). Possibly the only permanent water jump in America.

day's workout. We hope to produce many good steeplechase runners as a result of having this one always available.

The Cost of Construction. The total cost for the construction of the track and field was approximately \$45,000. The track alone was approximately \$23,000.

Although we were always in favor of constructing a non-porous track, the administrative officers asked for figures on the old style porous track. Much to our surprise, we found that the cost of constructing a good porous track with an underground watering system would be more expensive than the one we built.

Innovations

1. It has been our belief that raised curbs are dangerous and unnecessary so we planned and built ours flush with the track. It is easy to determine whether or not a runner fouls because the track is raised about 4 inches and, therefore, the runner steps down off the track if he is pushed or deliberately steps inside. The NCAA rules were revised this year to permit this type of construction. Runners have been unanimous in their praise of this feature because they can hug the pole and have no fear of falling down (Illustration 6).

2. By abandoning the raised curb we were able to permit every lane to be handicapped equally over the other, thus eliminating the unfairness and often misunderstood handicapping of the first lane (12 inches from the curb) over the second (8 inches from the line). In other words, on this track the inside man can run just as close to the inside yellow line (flush curb) as the others run to their white lines.

Illustration 6. The flush curb which is an innovation in the construction of tracks. The probability of injury caused by the raised curb is alleviated. Permits all staggers to be identical.



3. The modern method of training middle distance and distance runners calls for so much timing that we had a large electric clock with a second hand installed at the finish line. It faces partially down the track so that the runners can see their times coming in. This innovation has given us much more time to devote to members of the team other than the distance and middle distance runners (Illustration 7).

4. Low prickly bushes were used as fences to protect the runways, track, and especially the outside of the finish line.

5. We used a highway marking machine to paint all of the lines on the track. The regular white-beaded paint that glows at night was used, and we might add it is very effective. It took the workmen only four hours to mark the entire track.

This, of course, was a pioneer construction job and many unforeseen mistakes were made. If we had it to do over, we would:

1. Drain the track to the inside and bank to curves about 18 to 24 inches. The only advantage of the outside drainage is that we do not have to take care of so much water on the infield, and it is not necessary to have drainage outlets to obstruct running on the infield of the track.

2. Have the straightaway about 10 yards longer which would permit the high school 180-yard low hurdles to be run on the straight.

3. Make the runways the smallest width they could be laid by the paving machine — about 6 feet. The machine can lay the rubber-asphalt perfectly level which is practically impossible to do by hand.

4. Move the high jump pit closer to the center of the field for better viewing.

5. Take some of the excavated dirt and build a terrace about 4 to 8 feet high on which to place the bleachers.

6. Place a 4-foot chain link fence in front of the bleachers.

7. We have a fence (4-foot chain link) around the inside of the finish area. The section occupied by the announcer, scorekeeper, and press should not open on to the track, but to the side. The surface of this area is asphalt, and

Illustration 7. The finish area with the judges' stands on the left and the scorekeeper's and announcer's area on the right. Notice the electric clock which is used to time runners.



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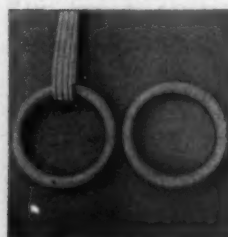
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table and chair legs sink into it. It should be concrete.

There were a number of mistakes made in this first effort to lay a rubber-asphalt track which can be easily avoided by future builders. Some of them are:

1. The rubber buffings (collected from the tire retreading shops) must be carefully screened so that no pieces larger than a half match stick are used. They tend to rise up out of the track and must be cut off or pulled out.

2. The loads of rubber-asphalt coming to be laid must be at 200° for best results in rolling.

3. The 6-ton roller must follow right after the paving machine and a water spray on the roller is necessary to prevent pick-up.

4. Rakes must be used as sparingly as possible in laying the rubber-asphalt. The best job is done by the machine. At Calvin College they plan to use two paving machines, one following the other, to eliminate the cold joint that tends to develop between the strips laid by the machine.

5. A well-adjusted asphalt paving machine of the modern design should be used.

6. Be sure to finish the infield runways and pits, etc., before laying the rubber-asphalt surface on the track to avoid trucking over it.

7. The rubber-asphalt should be laid on a day when the temperature is 80 to 90° for best results. It can be done in about a day and a half.

8. Make certain that the paving machine does not have to wait for a load to come from the plant mixer. This delay invariably produces a rough spot or seam.

9. We almost made the mistake of putting a seal coat on top of the rubber-asphalt. We had planned to apply a coat or two of some rubberized paint on the surface, but after experimentation found that it did not permit the spike holes to close (as they do on the rubber-asphalt) so the idea was abandoned.

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Economy Track Equipment Co.	55
1824 Newark Ave., S. E., Grand Rapids, Mich.	
Elmer's Handicaps	4
805 Dallas St., Big Spring, Texas	
Fair-Play Scoreboards	53
Box 359, Des Moines 2, Iowa	
Fenner Hamilton Corp.	23
3200 S. Zuni St., Englewood, Colo.	
Gill Co., The Harry	44
401 N. Vine St., Urbana 1, Ill.	
Gold Medal Products Co.	4
1825 Freeman Ave., Cincinnati 14, Ohio	
Gravco Corp.	53
5420 Queens Ave., St. Louis 15, Mo.	
Harvard Table Tennis Co.	7
60 State St., Boston, Mass.	
Heuer Timer Corp.	60
441 Lexington Ave., New York 17, N. Y.	
Hillerich & Bradshy Co.	17
434-436 Finzer St., Louisville 1, Ky.	
Hillyard Chemical Co.	1
St. Joseph, Missouri	
Hoffman, Bob	27
York, Pennsylvania	
Holmes Folding Hurdles	51
304 S. Junction Ave., Detroit 9, Mich.	
Horn & Bro., Wm. H.	50
451 N. Third St., Philadelphia 23, Penna.	
Huntington Laboratories, Inc.	29
Huntington, Indiana	
Jayfro Athletic Supply Co.	61
84 Union St., New London, Conn.	
K. & P. Athletic Co., The	54
1115 Jerome St., Midland, Mich.	

COACHES READY REFERENCE SERVICE COUPON

JANUARY, 1961

As a service to our readers and for their convenience we list here the advertisers appearing in this issue. Many of the concerns offer free booklets and coaching aids. Simply cut along perforated rule and mail to:
Service Department, ATHLETIC JOURNAL,
1719 Howard St., Evanston, Ill.

COMPLETE LINE

MacGregor Co., 32, 33,	See advertisement
Rawlings Sporting Goods Co., Cover 2,	<input type="checkbox"/> Catalog
Spalding & Bros., Inc., A. G., 47,	<input type="checkbox"/> Catalog

SHOES

Converse Rubber Co., 37,	<input type="checkbox"/> Information "All-Star" basketball shoes and tennis shoes
Riddell, Inc., John T., Cover 3,	<input type="checkbox"/> Information "Riddell" baseball shoes

CLOTHING & LETTERING

Champion Knitwear Co., 52,	<input type="checkbox"/> Catalog
Sand Knitting Mills Corp., 56,	<input type="checkbox"/> Catalog
Spanjian, 20, 21,	<input type="checkbox"/> Catalog and sample swatch

TRAINERS' SUPPLIES

Becton Dickinson & Co., 5,	<input type="checkbox"/> Information "Ace" rubber elastic band-ages
Bike Web Co., 24, 25,	<input type="checkbox"/> Information "Bike" trainers tape
Chattanooga Pharmacal Co., 60,	<input type="checkbox"/> Literature and prices
Elmer's Handicaps, 4,	<input type="checkbox"/> Information leg, arm, hand, and vest weights
Horn & Bro., Wm. H., 50,	<input type="checkbox"/> Information hinged knee braces, ank-lets, and knee caps
Precision Athletic Goggle Co., 53,	<input type="checkbox"/> Brochure
Safe Play Goggle Co., 47,	<input type="checkbox"/> Information eyeglass holder, whistle mouthpiece cover, and whistle lanyard
Seron Mfg. Co., 54,	<input type="checkbox"/> Free sample and prices
Snow Proof Co., The, 49,	

GYMNASIUM & FIELD EQUIPMENT

Aalco Mfg. Co., 56	<input type="checkbox"/> Catalog
Aluminum Athletic Equipment Co., 59,	<input type="checkbox"/> Catalog
Arnett, Richard W., 43,	<input type="checkbox"/> Information "Arnett" starting blocks
Brown Co., M. D., 61,	<input type="checkbox"/> Literature and prices
Canning, Bob, 48,	<input type="checkbox"/> Information rubber blocking dummies
Economy Track Equipment Co., 55,	<input type="checkbox"/> Information traveling game phones
Fair-Play Scoreboards, 53,	<input type="checkbox"/> Information "FF-IS" basketball score-boards
Fenner Hamilton Corp., 23,	<input type="checkbox"/> Catalog and price list
Gill Co., The Harry, 44,	<input type="checkbox"/> Catalog
Gold Medal Products Co., 4,	<input type="checkbox"/> Catalog on popcorn machines
Gravco Corp., 53,	<input type="checkbox"/> Information "Gravco" baseball valet cart
Harvard Table Tennis Co., 7,	<input type="checkbox"/> Table Tennis Tournament Kit
Heuer Timer Corp., 60,	<input type="checkbox"/> Catalog
Holmes Folding Hurdles, 51,	<input type="checkbox"/> Information "Holmes" folding hurdles and starting blocks. See coupon in advertisement
Jayfro Athletic Supply Co., 61,	<input type="checkbox"/> Catalog
K. & P. Athletic Co., The, 54,	<input type="checkbox"/> Name of nearest dealer
Mohawk Valley Sports, Inc., 42,	<input type="checkbox"/> Information "Mohawk" basketball equipment
National Sports Co., 60,	<input type="checkbox"/> Catalog
Navco Scoreboard Co., 42,	<input type="checkbox"/> Bulletin No. 26-A
Nissen Trampoline Co., Cover 4,	<input type="checkbox"/> Catalog on "Nissen" trampolines
Porta Sport, 45,	<input type="checkbox"/> Brochure
Program Aids Co., Inc., The, 56,	Full color catalog on <input type="checkbox"/> Playmaster* Coaching Aids; <input type="checkbox"/> Pick-A-Play* Coaching Aids; <input type="checkbox"/> Record-Master* "Hall-of-Fame" Displays; <input type="checkbox"/> Eraso* Posters and Charts; <input type="checkbox"/> Spot Awards* Trophies and Cups; <input type="checkbox"/> Equip-Trol* Inventory Control Systems; <input type="checkbox"/> Score-King* Magnetic Score-board; <input type="checkbox"/> Bandmaster* Formation Planner

Scott Port-a-Fold, Inc., 52,
Stadium Products Co., 55,
Troy Laundry Machinery, 49,

Universal Bleacher Co., 54,
Wells Lumber Co., 6,

- ☐ Brochure
☐ Information folding hurdles
☐ Complete details "Troy Laundrite" equipment
☐ Catalog
☐ Booklet "Money-Making Gym Floors"

FLOOR FINISHES

Hillyard Chemical Co., 1,

Huntington Laboratories,
Inc., 29,

- ☐ Information "Trophy" gym floor finish. See coupon in advertisement
☐ Booklet "Huntington Gym Floor Manual." See coupon in advertisement

SWIMMING SUPPLIES

Ocean Pool Supply Co., 42,

- ☐ Catalog D

NETS

Linen Thread Co., The, 57,
Sterling Net & Twine Co.,
Inc., 15,

- ☐ Information "Gold Medal" sport nets
☐ Literature

RUBBER BALLS

Voit Rubber Corp., 28,

- ☐ Overweight footballs, all-rubber line markers, training basketballs, tetherballs, and batting tees

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Hillerich & Bradsby Co., 17,
Tober Baseball Mfg. Co.,
Inc., 58,

- See listing under "Films"
☐ Catalog and price list

FOOD PRODUCTS

Hoffman, Bob, 27,

- ☐ Information "Energol" germ oil concentrate

FENCING EQUIPMENT

Santelli, Inc., George, 61,

- ☐ Catalog

TURF PRODUCTS

West Point Products Corp., 59,

- ☐ Booklet "Improving Athletic Field Turf-grass"

CLINICS

National Football Clinic, 46,

- ☐ Information

FILMS

Hillerich & Bradsby Co., 17,

Arrange for showing of 1960 World Series film through your sporting goods dealer

BOOK CLUBS

Coaches' Book Club, The, 35,

See coupon in advertisement

NEW ITEMS

Aluminum Athletic Equipment
Co., 62,

Economy Track Equipment Co.,
62,

Gymnastic Supply Co., 62,

Jayfre Athletic Supply Co., 62,

Wilson Sporting Goods Co., 62,

- ☐ Information broad jump "Sight Bar"
☐ Information ball-carrier
☐ Information wooden rings
☐ Information portable nylon golf practice net
☐ Information "Comet" basketball shoe

BOOKS

(Enclose money where required)

Athletic Enterprises, 49,

Brown Co., Wm. C., 30, 31,

Lauritsen, Wesley, 3,

Lea & Febiger, 57,

Olson, Carl H., 62,

- ☐ Organization and Administration of the High School Varsity Club, \$1.50
☐ Locker Room Slogans, \$1.50
☐ Complete Plans for Charging Sled, \$1.50
See advertisements for list of books for sale
See advertisement
☐ "Athletic Injuries," Augustus Thorndike, \$4.50
☐ "Manual of Bandaging, Strapping and Splinting," Augustus Thorndike, \$2.75
☐ Track and Field Score Cards, 90 cents per set

This coupon not good after February 28, 1961

Coupon will not be honored unless position is stated.

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CITY ZONE STATE

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723 Sixth St., N. E., Faribault, Minn.

Lea & Febiger 57
600 Washington Sq., Philadelphia 6, Penna.

Linen Thread Co., The 57
Blue Mountain, Alabama

MacGregor Co. 32, 38
4861 Spring Grove Ave., Cincinnati 32, Ohio

Mohawk Valley Sports, Inc. 42
Little Falls, New York

National Football Clinic 46
544 Lincoln Highway, Coatesville, Penna.

National Sports Co. 60
362 N. Marquette St., Fond du Lac, Wisc.

Nevco Scoreboard Co. 42
Greenville, Illinois

Nissen Trampoline Co. Cover 4
200 A Ave., N. W., Cedar Rapids, Iowa

Ocean Pool Supply Co. 42
155 W. 23rd St., New York 1, N. Y.

Olson, Carl H. 62
Box 567, Patchogue, L. I., N. Y.

Porta Sport 45
Box 453, Hicksville, N. Y.

Precision Athletic Goggle Co. 53
Rochelle, Illinois

Program Aids Co., Inc., The 56
550 Fifth Ave., New York 36, N. Y.

Rawlings Sporting Goods Co. Cover 2
2300 Delmar Blvd., St. Louis, Mo.

Riddell, Inc., John T. Cover 3
1259 N. Wood St., Chicago 22, Ill.

Safe Play Goggle Co. 47
540 E. Grand Ave., Beloit, Wisc.

Sand Knitting Mills Corp. 56
Berlin, Wisconsin

Santelli, Inc., George 61
412 Sixth Ave., New York 11, N. Y.

Scott Port-a-Fold, Inc. 52
748 Middle St., Archbold, Ohio

Seron Mfg. Co. 54
Barber Bldg., Joliet, Ill.

Snow Proof Co., The 49
Livonia, New York

Spalding & Bros., Inc., A. G. 47
Chilcopee, Massachusetts

Spanjian 20, 21
P. O. Box 3111, Pasadena, Calif.

Stadium Products Co. 55
Spencer, Iowa

Sterling Net & Twine Co., Inc. 15
164 Belmont Ave., Belleville 7, N. J.

Tober Baseball Mfg. Co., Inc. 58
P. O. Box 210, Rockville, Conn.

Troy Laundry Machinery
Div. of American Machine and Metals, Inc. 49
East Moline, Illinois

Universal Bleacher Co. 54
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TRAMPOLINE® BRAND
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CHROME PLATED

AT NO EXTRA COST



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